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ABSTRACT

This study compares vocational education programs in seven countries in order to evaluate the different elements of a comprehensive approach to education for work that reaches beyond isolated skill training. Despite their divergence in scope and intention, a common feature of these programs is that they endorse the approach of lifelong vocational development. The study's hypothesis is that effective education for work has to be based on a comprehensive approach to a meaningful articulation of these different specifications of learning experiences. Following a synthesis by Gert Loose, the report contains the following chapters: "Nonformal Vocational Training in Venezuela" (Fuenzalida et al.); "Hibernia School: Analysis of an Integrated Curriculum Embracing Vocational Development" (Heyder, Schneider); "Vocational Development through the Education Programme of the Sarvodaya Shramadana Movement in Sri Lanka" (Perera); "Analysis of School and Out-of-School Education for Vocational Development in the Perspective of Lifelong Education in Poland" (Nowacki); "In-School and Out-of-School Curricula for Vocational Development in Tanzania" (Athumani); "Using Career Guidance to Support Career Development: The Career Planning Support System (CPSS) as an Illustrative Innovation" (Miller, Campbell); and "Learning by Participation: A Renewal Project in the Dutch Education System" (van Donk). Each case study is preceded by a description of its profile, aspects of cross-national transferability, and distinctive features by Loose. Most chapters include tables, figures, and a bibliography. (KC)

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VOCATIONAL EDUCATION IN TRANSITION: A SEVEN-COUNTRY STUDY OF CURRICULA FOR LIFELONG VOCATIONAL LEARNING

Gert Loose

With contributions by

Ismael Silva Fuenzalida et al.
Betty Heyder and Peter Schneider
Daya A. Perera
Tadeusz W. Nowacki
Ahmedi Athumani
Juliet V. Miller and Robert E. Campbell
Jan van Donk

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FOREWORD

Lifelong education has been the central theme of the research work of the Unesco Institute for Education since 1972. As a result UIE has published a number of studies which explore the practical implications of the concept for the objectives, content and processes of formal, non-formal and informal learning in both industrialized and developing countries.

By definition lifelong education extends throughout the life span, but the concept also extends into all life spaces, including learning that takes place in the home, school, community and workplace. This concept views education in its totality for the purpose of achieving the fullest possible development in personal, social and vocational life. While other publications of UIE consider one or more of these aspects of development, the present volume is devoted specifically to the vocational.

The need for lifelong learning is particularly evident in vocational development, where the introduction of modern technologies and the fast pace of economic change render today's skills obsolete tomorrow. The recognition of the consequent need for lifelong vocational adaptability and learning has nonetheless yet to be reflected in the provision of appropriate structures and the creation of an evolving curriculum in many national systems of education for work. As a contribution to developments in this field UIE therefore launched in 1980 its study of approaches to vocational education in varied cultural settings.

Several other publications by UIE have treated the theme of vocational education. The first Case Study, published in 1979, considered the Hibernia School in depth under the title *Integrating Vocational and General Education*. The Second All-European Conference for Directors of Educational Research Institutions in 1979 addressed itself to the relationship between school education and work: the report was published in 1980.

The sixth Case Study, which appeared in 1981, examined

Education and Work in the Spanish Educational Reform, and since then UIE's Studies on Post-literacy and Continuing Education have considered the development of vocational as well as general educational skills. They were published between 1984 and 1988 in English, French, Arabic and Spanish. The present publication is therefore the latest in a line of studies and reports related to the topic.

The clear theoretical framework within which the study was developed and carried out is presented here by the project coordinator. This framework is intended to meet the need for a solid foundation on which to build a system which will satisfy the foreseen and unforeseen vocational needs of individuals throughout their lives. Such a foundation is necessary in the light of the increasing demands being placed on vocational education to fight unemployment and prepare learners for technological and social change.

The study set out to delineate potential paths of lifelong vocational learning by examining prevocational and vocational curricula which make use of a range of different learning environments. The seven case studies in this volume, from countries in five continents, demonstrate through the variety of their curiculum areas the scope of education for work. Consequently they offer a major source of ideas and models for the reform of vocational education.

The experiences reported here not only enable a theoretical basis to be constructed, but also take operational factors into account. This balance of theoretical and practical considerations is intended to facilitate a transition from the concept of vocational education as training in one or more skills to that of vocational development through different stages and across the different environments of an individual's life span. However, relevant reform concepts such as *anticipatory* and *participatory* learning can only be effective in education for work if they can depend on a learner who is well informed regarding his age-specific vocational needs. This precondition cannot be fulfilled by a restricted concept of training for functional skills. Similarly, the integration of theoretical and practical learning, the emphasis on providing guidance services, the individualization of learning and other reform concepts all require a definition of the vocational learning process which takes account of sequential and age-specific stages. It is the thesis of the study that the contemporary challenges faced by education for work can only be answered through a comprehensive approach encompassing all the stages and environments in which it can occur.

This study has yet another goal. Educational experts are actually engaged in the development reform of vocational curricula. In many instances they need guidelines as to how they can benefit from the specific vocational education experience of their own country for the solution of problems in a different national setting. Similarly, the policy maker and practitioner in any country may be enabled to check the applicability of models from elsewhere against his own environment and to adapt them as appropriate. The lack of guiding principles for the transfer of experience, especially in the field of bilateral and multilateral vocational education aid to developing countries, is recognized in the study, and a pragmatic approach is outlined to overcome this difficulty.

Of course such a comprehensive study is dependent on the constructive contribution of all its participants. Our sincere thanks are due to the authors of the case studies who have met twice with UIE staff and the coordinator in Hamburg, on the first occasion to participate in planning the study and subsequently to review draft reports and to conduct cross-national analysis. We are also particularly grateful to Johanna Kesavan, whose painstaking reading of the whole study and manifold helpful suggestions have led to numerous detailed improvements. We thank Peter Sutton, Inés Pennacca and Ulrike Schröder for the final editorial and production work, and are indebted to the German Agency for Technical Cooperation (GTZ) for their generous financial contribution towards the publication of this book. Finally, I express our profoundest gratitude to Gert Loose, the project coordinator, whose insight and tenacity have brought this extensive study to the present conclusion.

Ravindra H Dave
Director
Unesco Institute for Education

VOCATIONAL EDUCATION IN TRANSITION: SYNTHESIS OF THE SEVEN CASE STUDIES

PREFACE

The world economy is increasingly characterized by highly differentiated national and supra-national labour markets. Countries are striving to optimize their resources by establishing effective systems of preparing individuals for employment. For successful competition in today's labour markets it has become a prerequisite for individuals -- even in developing countries -- to have skilful performance in modern technologies and specialized trades at their command.

Usually, national systems of vocational education have been looked upon as being responsible for qualifying individuals for work. Too often this responsibility has shortsightedly been restricted to direct training for the immediate skills needed for a particular kind of work. These so-called 'functional' skills were thought to be all that is needed for work in occupations. Yet this restricted concept of training ignores the tremendous importance of work-related attitudes such as punctuality and ability to cooperate. It isolates education for work from the overall education of the individual and thereby neglects the latent acquisition of skills in an intricate and comprehensive developmental process.

In order to evaluate the different elements of a comprehensive approach to education for work which reaches beyond isolated skill training this study compares vocational programmes in seven countries. Despite their divergence in scope and intention it is a common feature of these programmes that they endorse the approach of *lifelong vocational development*.

This comprehensive approach is envisaged here to replace isolated skill training as a more effective concept for the preparation of individuals for their working life. The approach proceeds through different stages of vocational learning by utilizing a variety of learning environments and different modes of learning and it thereby establishes itself as an integral part of *lifelong education*. This applies to preparation for a skilled craft as well as for any occupation beyond this level. Such a comprehensive frame naturally implies certain limitations regarding the scope of this study: a detailed analysis is only provided up to the stage of preparation for job entry (employability) and informal learning outside intentional learning experiences is not treated in the analysis.

Within the scheme of lifelong vocational development formal vocational education in a school setting is supplemented by other avenues to learning such as non-formal education in upgrading programmes and informal learning in the home or at the workplace. This approach encompasses all 'stages' of learning in a 'lifespan', such as awareness, experimentation and employability, and it runs across the whole variety of learning 'environments' of a 'lifespace' such as classrooms, laboratories, school workshops, training centres, actual workplaces, and of course the peer group and the home.

It is the hypothesis of this study that effective education for work has to be based on a comprehensive approach to a meaningful articulation between these different 'specifications' of learning experiences. Neither vocational awareness nor the mere possession of employable skills is in itself a sufficient preparation for working life, nor can learning in a classroom or at a training centre provide a complete setting for an individual's vocational development.

To support this hypothesis the experience of vocational programmes in seven countries has been appraised, with particular regard to the differentiation of 'stages' and 'environments' of vocational development or, in other words, of the qualitatively different steps of a sequence of vocational learning as well as the variety of different sites where this learning takes place. These two dimensions, 'stages' and 'environments', will be established as the *principal descriptors* for this study.

The seven countries from which case studies are presented are Venezuela, the Federal Republic of Germany, Sri Lanka, Poland, Tanzania, the USA and the Netherlands (in the order of their inclusion). These countries have been selected because they are the home of programmes which were expected to render valuable insights into different aspects of lifelong vocational development. Yet, in spite of their common focus on aspects of vocational development, these programmes differ greatly in content, organization and learning clientele.

It is the goal of this study to take this diversity of country-specific experience as the starting point for solving common problems in education for work. However, the study avoids putting forward universalistic solutions since cultural, demographic and economic differences between countries prohibit the development of one comprehensive, generally applicable system of vocational education. Instead an approach is presented which focuses on the solution to common problems through the cross-national transfer of curricula in vocational education.

Hence, the main addressees of this study are the numerous education experts who are in most cases not well enough prepared to satisfy a crucial prerequisite for planning comprehensive reforms, i.e. the ability to detach themselves from the experience of their own country. Especially on mission abroad they often have no other rationale for action than attempting to achieve a transfer of experience from their own national background to problem solving in their host country, and they lack the criteria for valuing the applicability of their experiential background.

In order to serve adequately the needs of this clientele this study has to attempt to delineate the intricate operational process of appraisal and *transfer of country-specific experience*. This process is especially crucial to vocational education aid to developing countries, and it is hoped that the results of this study will effectively assist education experts in their home countries as well as on their missions abroad.

1. BACKGROUND REPORT

Seven *case studies* are presented here in an attempt to provoke a fruitful discussion about common concerns in the reform of curricula for vocational education. The case studies have been written by representatives from each country in cooperation with the project coordinator according to a scheme which emphasizes the elaboration of 'stages' and 'environments' of vocational development as the 'principal descriptors' of this project. A *brief analysis* preceding each case study presents a summative outline of the case study's basic design, an appraisal of the country-specific experience with regard to 'stages' and 'environments' of vocational development, and the particular characteristics of each national approach. At the beginning of each case study a short *country profile* familiarizes the reader with the national background of the curricula of vocational development and a chart depicting the structure of the country's formal education system has been included for further information.

The case studies represent different areas of curriculum development which supplement each other. Their main value lies in illustrating and supporting the 'stages' and 'environments' of vocational development. They were not selected with the intention of portraying national systems of curricula for vocational development, but the main criterion for selection was the expected benefit to be drawn from the national vocational education experience for the reform of education for work in other countries.

This *synthesis* of the case studies concentrates on the elaboration of 'stages' and 'environments' as principal descriptors of vocational learning. Although these descriptors can be applied to all the case studies, they are not ends in themselves. They serve as (1) basic structural components of education for work, and (2) a blueprint for cross-national transfer of experience between the case studies.

Widely differing curricula for vocational development have been described in the case studies. They range from the national system of vocational education for young people already in employment in Venezuela to vocationally oriented curricula for problem teenagers in the Netherlands, and they include such diverse studies as the Polish national system of prevocational and vocational education and the Sri Lankan vocational initiatives of a voluntary self-help organization. The profile of 'stages' and 'environments' of vocational development covered in each case study has, therefore, to be viewed from the perspective of the particular intention of the curriculum area concerned.

Altogether the following curriculum areas are presented in the case studies:

- Venezuela (INCE): analysis of curricula of a national system of non-formal vocational education primarily for young people already in employment,
- Federal Republic of Germany (Hibernia): analysis of curricula of a private comprehensive school integrating theoretical and practical learning,
- Sri Lanka (Sarvodaya): analysis of curricula of a national system of non-formal vocational programmes of a non-governmental self-help organization,
- Poland (National System): analysis of curricula from the mainstream of the national system of formal and non-formal vocational education,
- Tanzania (Vocational Education System): analysis of curricula of a national system of formal and non-formal vocational education under dual ministerial responsibility,
- USA (CPSS): analysis of curricula and of the administrative structure of a system for the improvement of school-integrated vocational guidance programmes,
- Netherlands (ICP): analysis of vocationally oriented curricula for 16 to 19 year olds who cannot be attracted by regular school programmes.

This order of the case studies has been chosen to underline their shifting emphasis from national system/non-formal education (Venezuela), to school system/formal education

(Federal Republic of Germany), to voluntary system/informal and non-formal education (Sri Lanka), back to national system/formal education (Poland), to national system/ formal and non-formal education (Tanzania), and finally to semi-commercial formal, non-formal and informal guidance/education (USA) and to nationally advocated supplementary programmes/non-formal and formal education (Netherlands). As broad as this scope certainly is, it does of course not represent a complete range of vocational education systems and subsystems, nor can it claim to be representative of a worldwide perspective on education for work.

It is the diversity of these case studies from five continents which has posed a structural challenge to the design of this project. In essence: if a meaningful communication grid can be established which encompasses all these programmes, then one may assume that an approach has been devised which will unlock vocational education experience from its country-specific background. In this context 'stages' and 'environments' of vocational learning serve as components of comparability, with the far-reaching implication that a broadening of our preconceived notions of suitable 'stages' and 'environments' of vocational learning can promote fundamental change in education for work. The need for such change is discussed in the following chapters of this synthesis, but the evidence is provided in the case studies themselves.

2. TOWARDS A REORIENTATION OF EDUCATION FOR WORK

In its theoretical outlook this study rests on the interaction of two central concepts of education: *vocational education* and *lifelong education*. The innovative potential of lifelong education has been tapped in an attempt to solve some of the most pressing contemporary problems of vocational education or education for work, for although it is widely claimed that it should be accorded priority, it has become an indisputable fact that *vocational education is worldwide in deep crisis*.

In *industrialized countries* the attempts of national assessment campaigns to portray the benefits of vocational education have not been successful. None of the five recent national assessment crusades at the secondary school level in the USA could provide sufficient proof of the impact of vocational courses (see Copa et al, 1983). As a result we must still be uncertain about the effects of vocational education.

In *developing countries* there is the threat of a fundamental disillusionment about the potential of vocational education for national development. After the euphoria over the possibilities of nation-building through literacy campaigns and general education the second wave of educational reform in prevocational/vocational education has created some unrealistic expectations (Unesco, 1980).

Finally, *developed and developing countries* share the concern about high rates of unemployment. Vocational education was regarded in this context as a powerful device in fighting unemployment. Yet it has become more and more obvious that vocational education can take care of the acquisition of skills, but cannot generally provide jobs.

Furthermore there has been a growing recognition that vocational education is incapable of keeping pace with the rate of change in occupations which are affected by the introduction of microprocessor technologies. Increasingly, the appropriate preparation for dealing with modern technologies has been regarded as the outstanding challenge for vocational education in our time.

The uncertainty about what vocational education can or cannot achieve has nurtured and intensified the attempts at some fundamental reorientation in defining the role of education for work. Failure on the job has increasingly been put down to poor adaptation to the work environment instead of to lack of functional skills. Hence the *attitudinal and interpersonal aspects of working life* have come to be regarded as even more important than proficiency in functional skills. In consequence, the motivational and learning potential of combining in-school and out-of-school vocational education has increasingly been utilized in the form of compound systems of learning environments. Most importantly, it has become evident that preparation for work has to start early in an individual's life and should then continue in a lifelong process.

What is actually needed is the merging of all aspects of reform by means of a *conceptual reorientation of the total system of education for work*. This reorientation reaches far beyond an answer to the challenge of modern technologies as well as vocational education's role in fighting unemployment. It concerns the basic approach to preparation for working life in *all* occupations. And instead of reducing work preparation to the acquisition of immediate job skills, it pursues a holistic long-term developmental process which attempts to unfold all capacities related to the role of work in life, the assessment of different types of work in relation to one's own work performance and a comprehensive preparation for entry, establishment and progress in an occupation of one's informed choice.

Increasingly we have come to realize that vocational education in the form of pure skill training can no longer claim that it satisfactorily fulfils the task of preparation for work. This recognition is valid for in-school-settings and for out-of-school learning environments alike and it cannot even be overcome by dual systems combining in-school and out-of-school learning.

Yet the criticism is still valid worldwide that no sufficiently comprehensive approach to education for work has been implemented. And it is not realistic to hope and expect that the thrust of insights from a variety of vocational education reform initiatives will culminate in a basic reorientation of education for work. It is unlikely that researchers, planners and administrators of elementary school prevocational courses for career awareness, of vocational courses for the enhancement of basic vocational skills at the secondary school level and of skill training in various settings will join hands to develop a comprehensive system of education for work, unless some new framework is provided.

The common approach to vocational education, especially in developing countries, is still largely synonymous with *skill training* and there are only few signs that attempts to enlarge substantially the concept of vocational education are under way. Therefore, a fundamental reorientation of the total system of education for work is indispensable. This should also employ recent insights into the dimensions of effective learning.

Such a reorientation is feasible through the concept of *lifelong vocational development*, which propagates vocational learning across all age levels by employing compound systems of different learning environments. The concept of lifelong vocational development draws heavily upon the theories of vocational development and upon an emerging theory of learning in different environments. These theories emphasize the 'lifespan' and 'lifespace' dimensions of vocational learning.

The *theories of vocational development* elaborated by Super, Ginzberg and others (see Crites 1980) have served as the backbone of a modern process-oriented approach to vocational guidance. This became the main agent for the conceptualization of 'Career Education' in the seventies and its insights should be applied here for the enlargement and enrichment of 'stages' of learning in the concept of vocational education.

On the other hand a *theory of learning environments* is still being developed. It attempts to document the importance of the situational dimension of learning (Ferrin and Arbeiter 1975). In-school and out-of-school learning environments supplement each other in the motivational and learning resources they can offer. From formal instruction in classrooms to nonformal education in training centres and finally to informal learning at the workplace different environments are interlinked to achieve 'optimal' learning output from a variety of intended and unintended learning situations. Again these insights should be applied for the enlargement and enrichment of the traditional concept of vocational education.

Before a more differentiated perspective of this frame of reference of 'stages' and 'environments' can be provided, and before it is applied as a structural tool in the national case studies, some *methodological* issues of this study have to be discussed. Again it must be emphasized that no universalistic model of education for work is presented here, but cross-national applicability is sought for 'stages' and 'environments' of vocational learning as 'principal descriptors' within country-specific systems of education and training.

Furthermore, 'stages' and 'environments' are presented in the case studies in their country-specific profile. What is expected from an expansion of the range of these dimensions in any given programme is an increase in its effectiveness: in this context 'stages' and 'environments' become 'transferable features of attempted reform'. They are therefore not only a contribution to the theoretical basis of education for work, but they also invite practical application.

3. ORIENTATION MARKS FOR EXPLOITING COUNTRY-SPECIFIC EXPERIENCE FOR CROSS-NATIONAL COOPERATION

It has been stated that there is an urgent worldwide need for the reform of education for work. In order to proceed in this direction 'stages' and 'environments' of vocational development have been established as 'principal descriptors' for a meaningful analysis of different scenarios of vocational learning. Yet in order to go beyond a structured description of education for work and devise models for its reform, 'stages' and 'environments' have to assume a different quality. Their country-specific profiles are intended to serve in cross-national work as 'transferable features of attempted reform'.

The validity of this approach will be established through clarification of the following three basic issues:

- Can a meliorative effect safely be assumed from expanding the stages and diversifying the environments of vocational development? (Ch. 3.1)
- How can non-universalistic solutions to universal problems in education for work be defined? (Ch. 3.2)
- Which parameters have to be observed in the cross-national transfer of vocational education experience? (Ch. 3.3)

The outcome of the clarification process will be briefly summarized in the form of statements, and a more detailed analysis of 'stages' and 'environments' of vocational development will follow these methodological considerations.

3.1. The Comprehensive Implementation of 'Stages' and 'Environments' of Vocational Education

The establishment of 'stages' and 'environments' as 'principal descriptors' in the analysis of scenarios of vocational learning does not necessarily imply meaningful reform. Yet a closer look at vocational programmes demonstrates that both dimensions of learning suffer from a restricted implementation of their potential scope. Regarding the implementation of 'stages' of vocational development the current situation can be appraised as follows:

First Statement: Vocational needs are at present largely restricted to the mere acquisition of functional skills (stage of 'employability'). However, these needs differ in the course of a lifespan. They should start in childhood with the appreciation of the child's prospective role as a worker, must encompass skill training itself, insights into necessary upgrading and retraining, readiness for vocational mobility and finally the recognition that the quality of working life will change with advancing age and that this sphere of life will eventually even come to a close.

Neither the command of functional skills (employability) nor the appreciation of one's role as a worker (vocational awareness) are by themselves a sufficient preparation for successful participation in the work process. An individual can only fulfil the role of worker effectively for him- or herself and for society when he or she is in relative harmony with a sequence of different stages of vocational development over the lifespan. It is, therefore, essential for education that assistance is provided for all aspects of the vocational development process. Consequently, the contents of preparation for work through education should be arranged in a sequence of consecutive units geared to the vocational needs occurring over a lifespan (Loose, 1985). This study aims to present a basic sequence of these needs on a supra-national level.

Regarding the implementation of 'environments' of vocational development the current situation can be appraised as follows:

Second Statement: Vocational education - and education in general to an even greater extent - is still largely considered to be the monopoly of schools and training institutions (the learning environment of 'classroom' and 'school workshop'). But certain learning needs are

> more effectively met by out-of-school learning environments. Each learning environment has its particular quality in assisting the process of transmitting knowledge and skills: abstract mathematical contents are best learnt in the classroom while functional skills are best acquired at the workplace. Learning should, therefore, exploit the potential of a variety of different learning environments.

Most of a child's avenues to learning have already been established before he or she goes to school, and flexible learning arrangements for non-formal education dominate later in life. Hence any definition of learning needs or vocational needs must always be accompanied by consideration of the proper environment of learning. Never should a unit of vocational learning be viewed as an isolated experience. There is always a connection with insights which have been gained from earlier learning experiences, and the foundation must be laid for learning events in still other environments to come (see Bishop 1985). Therefore, education for work must draw upon the entirety of potential learning environments at a given time. In particular, interlinkages are needed between in-school and out-of-school curricula.

This brief review of the meliorative effects of expanding the 'stages' and 'environments' of vocational learning should have made it obvious that the detailed elaboration of these two 'principal descriptors' is capable of stimulating reform in vocational education. Through a detailed differentiation of 'stages' and 'environments' of vocational learning the range of options for this intended reform will be defined.

3.2. Avoiding Universalistic Solutions to Universal Problems

It can well be maintained that the restricted differentiation of 'stages' and 'environments' of vocational learning is a universal problem and that the agreement on an outline for reform would certainly be an important step forward. However, the impetus for reform must not be misunderstood as a search for universalistic solutions.

Instead, national variations have to be accommodated within the overall reform scheme. The unanimous appreciation of the value of preparation for gainful employment among all nations and cultures is not to be equated with a consensus regarding the type of programme required. Worldwide, varying approaches to vocational education share the same goals of achieving the highest possible effectiveness in preparation for work for society, community and the individual.

Different approaches to vocational education are described in the national case studies which are analyzed here. Divergence among these approaches even exists in countries where the environmental setting is similar. This divergence can largely be explained by conditioning factors of the political and socio-cultural background. Among western industrialized countries the educational system of the Netherlands, for example, offers vocational education courses which enrol 65 per cent of the annual batch of school leavers after the end of compulsory education, while in the neighbouring Federal Republic of Germany, where the general conditions are similar, only 15 per cent of school leavers attend full time vocational schools. On the other hand, in the FRG 40 per cent of this age group enter an apprenticeship as against only 3 per cent in the Netherlands (Deforge 1980). Different structures are also found among developing countries. For instance, in Tanzania planning for the economic growth of the country relies to a large extent on the development of vocational skills already at primary school level, while Venezuela places the emphasis on training for graduates of the general education system and offers courses for vocational qualification to those already in gainful employment.

The conclusion to be drawn from this observation of national divergence in vocational programmes is formulated in the following statement:

Third Statement: No single universalistic model of vocational education is applicable to all countries. Even where the societal conditions are similar, alternative concepts of vocational education exist. Hence, each national system of vocational education has to be regarded as a cluster of country-specific interconnected provisions for training and education.

However, it is also significant to note that the issues concerning the preparation for work may be quite similar even where the socio-cultural background is totally different.

Poland is trying as hard as the Netherlands to achieve an integration of general and vocational education, and in Sri Lanka the Sarvodaya Movement is making as strenuous efforts to relate the vocational education provision to the community as do the community school proponents in the USA.

On the basis of these observations, we can make the following statement:

Fourth Statement: Even across countries with fundamentally different political and socio-cultural backgrounds it is possible to discern structural similarities concerning the problems of vocational preparation and the approaches to their solution. Hence a worthwhile portion of the experiences gained in a particular country may be expected to provide supranational impulses for reform.

The basic message of these last two statements is the rejection of a universalistic model of vocational education combined with the validation of an attempt to define common structures of problems and problem solving in education for work in different countries. This message constitutes the orientation marks for the cross-national transfer of vocational education experience.

It is therefore a main function of this study to develop common suggestions for reform while avoiding putting forward a universalistic model. This is achieved through the definition and elaboration of the 'principal descriptors' and the application of 'transferable features of attempted reform', which represent concrete elements of education for work in the countries studied.

3.3. Parameters for Facilitating the Cross-National Transfer of Country-Specific Experience

For the process of utilizing 'transferable features of attempted reform' another clarification is needed: the methodology for the study's cross-national analysis has to be defined. Since cross-national work in vocational education should expect methodological guidance from the discipline of *comparative education*, this study has to appraise the contribution which comparative education can make.

A review of recent and past theory building in comparative education reveals that the discipline suffers from an increasing narrowing of the scope of its cross-national comparisons. This insight is confirmed in Noah and Eckstein's definition of five evolutionary stages representing the discipline's development. These five stages are:

- traveler tales,
- educational borrowing,
- international educational cooperation,
- identification of the forces and factors shaping national educational systems,
- social sciences explanation (Epstein 1983, p. 25).

Hence, from guiding cross-national borrowing in setting up national systems of education in the 19th century, the discipline has come step by step to the rather recent recognition that "...there was lacking a theoretical base upon which any country could with confidence know how to learn from another country's educational experience what would be useful for its own development" (Parkyn 1977, p. 87).

We are confronted here with a paradox: on the one hand the current state of the art in comparative education suggests that due to differences in the socio-cultural and political base the notion that a close comparability is needed for the transfer of experience between two national settings has principally to be rejected. On the other hand common practice in international educational cooperation, the field which should be nurtured and guided by research in comparative education, indicates that *foreign experts* in numerous vocational education projects around the world often have hardly any other rationale for the proposals they are called upon to make than *attempting to achieve a transfer of experience from their own national background to the problems in their host country*. Similarly, on the domestic scene vocational education planners are left without guidance in their desire to benefit from the experience of other countries when working on the solution of training problems in their home country.

The recognition that the discipline of comparative education is largely incapable of guiding the cross-national transfer of vocational education experience can be formulated in the following statement:

Fifth Statement: The discipline of comparative education has in its course of development increasingly rejected the view that country-specific educational experience is directly applicable in a cross-national setting.

This general inability of comparative education to render guidance for the solution of practical issues in international vocational education has to be overcome. Irrespective of methodological problems which are quite obvious, it is not acceptable that international work in this important field lacks the necessary scientific support. This study, therefore, agrees with the criticism of the prevailing theory in comparative education, which has been accused of being too narrowly oriented and unresponsive to pressing international needs (Holmes 1981).

An attempt will be made here to present the outline of an alternative approach. Such an approach has, however, to accept cultural differences, so that the idea of 'borrowing' from another culture within a total system's approach has also to be rejected. What is needed for vocational education reform through the transfer of experience between different national settings is the establishment of *means of comparability* as well as of *vehicles for reform*.

Through the establishment of a detailed communication grid, 'stages' and 'environments' as 'principal descriptors' can serve as means of comparability. And transferable 'features of attempted reform', which constitute the country-specific profiles of 'stages' and 'environments', can be applied as vehicles for reform.

Consequently, in total, *'stages' and 'environments' present the scheme for comparability, communication and reform.* It is within this scheme that education for work is reconceptualized from the restricted notion of skill training to lifelong vocational development. The dual function of 'stages' and 'environments' of vocational development as 'principal descriptors' and 'transferable features of attempted reform' can be stated as follows:

Sixth Statement: The comparability of systems and subsystems of vocational education is ensured through applying the communication grid of 'stages' and 'environments' as 'principal descriptors'.

> Furthermore, the country-specific profile of 'stages' and 'environments' endows them with the quality of 'transferable features of attempted reform'. It is on this level that the experience of one country is directly applicable to problem solving in another.

However, the complexity of the socio-cultural background has to be taken into account and a successful approach to education for work in one country might still be inappropriate in another, although the transfer had been in accordance with the structural implications of the communication grid. A precaution has, therefore, to be incorporated in the transfer since its appropriateness can only be confirmed when sufficient evaluative proof is available.

This procedure of demanding proof of appropriateness through evaluation after the cross-national transfer of experience can be stated as follows:

Seventh Statement: All processes of transfer have to be regarded as 'experiential borrowing', i.e. borrowing on condition that the reform process proves to be successful within the experience of another culture. The proof of success has to be provided through evaluation procedures. If the reform process fails the evaluation it must be suspended.

Consequently, there has to be careful checking of the success of any reform initiative and close scrutiny has to accompany the reform process. In this process the monitoring of 'transferable features of attempted reform' through evaluation has to aim at culture-specific adaptations and must always envisage the possibility of discontinuation of the reform process if there are unforeseen negative implications of the cross-national transfer.

3.4. Towards Defining and Applying Transferable Features of Attempted Reform: A First Summative View

The approach taken in this study encompasses the theoretical level of defining 'principal descriptors' as well as the operational level of exploring 'transferable features of reform' in education for work (see Morsy 1979, p. 7). The 'principal descriptors' are applied in the analysis of different national systems to reach beyond the uniqueness of any particular country's system of education for work, and the 'transferable features' are explored to generate initiatives for the reform of education for work which are cross-nationally applicable.

Altogether, the following summative view can be presented so far:

- A worldwide crisis in the effectiveness of vocational education calls for a reorientation of the current concept of the discipline; such a reorientation should follow a developmental approach and involve a diversified set of learning environments. In this context the validity of introducing 'stages' and 'environments' of vocational development as cross-nationally applicable dimensions is discussed.

- The revised perception of education for work should be based on a lifelong developmental process (statement 1) and on the intensification of learning through the implementation of compound systems of different learning environments (statement 2).

- In searching for a model for cross-national cooperation the idea of an ideal universalistic concept of vocational education which applies to different national and cultural backgrounds has to be rejected (statement 3).

- Cross-national reform of vocational education through a sharing of country-specific experience is strongly advocated, since similar targets for reform can be indentified even in disparate countries (statement 4).

- For facilitating cross-national work no guidance can be expected from most current theories in comparative education, since a restricted perception of the discipline's scope is dominant (statement 5).

- The comparability of country-specific vocational education experience is maintained through a communication grid formed by the 'principal descriptors'. And cross-national reform is initiated through the utilization of 'transferable features of attempted reform' (statement 6).

- In order to operationalize the cross-national transfer of country-specific experience 'experiential borrowing' is suggested as a model. It implies that the transfer is only accepted after evaluation has provided the proof of success in the new socio-cultural environment (statement 7).

4. THE 'PRINCIPAL DESCRIPTORS': DEFINING A DIFFERENTIATED SCHEME OF 'STAGES' AND 'ENVIRONMENTS'

A comprehensive discussion of the 'stages' and 'environments' of vocational learning has to encompass education for work in all stages of the lifespan (Ch. 4.1.) and across all environments of the lifespace (Ch. 4.2.). Because they are non-country-specific, 'stages' and 'environments' are presented here outside the context of the case studies. They provide guidance for theory building on a supra-national level while their concrete actualization in the form of 'transferable features' is contained in the case studies themselves.

4.1. Learning over the Lifespan: The Stages of Vocational Development

It has already been argued that it is a common misconception, especially in industrialized countries, to postpone vocational learning until adolescence. This misconception is rooted in the belief that (1) the young child would be overburdened by undue exposure to the grim adult reality of being at work and that (2) the young child would be misled and hampered in his or her learning potential if vocational contents were introduced before a sound basis of general education had been laid.

Yet it is quite obvious, and solid research findings assure us, that vocational development is a lifetime activity. At about age four children start to confront us with their fantasy choice of occupations, ranging from driver of a racing car to policeman and actress. Usually quite a number of fantasy choices are tested against reality before more realistic ideas take their place.

It is also wrong to believe that the features of early vocational development are in substance completely different from those of occupational roles in late adolescence or adult years. For the very young child and for the adult alike, performance in an occupation is activity-oriented, is related to social prestige, carries the promise of self-realization and is the main agent of interaction with the environment.

Vocational awareness begins as part of the natural development process from early childhood onwards, and forms an integral, inseparable part of human development. Yet it would be wrong to leave early vocational development to run its natural course. This complex field of preparation for working life cannot be left to happenstance. It has to be sensibly monitored by expert interference. The question is, therefore, in what way education and training, and in particular the formal education system, should enhance, guide and enrich an individual's vocational development from the early beginnings.

It is, therefore, unquestionable that education has to play an important role in reinforcing vocational development from the early years onwards. Significant vocational predispositions, such as sexual stereotyping and associating certain occupations with racial groups who dominate them, are determined in early childhood and are not likely to be reversed later. This is another reason why careful monitoring based on age-specific vocational needs should already be mandatory during the early stages of the vocational development process.

Moreover, a structured intervention in an individual's vocational development has to take account of the definition of vocational competencies over a lifetime. An arrangement of clusters of these competencies forms stages of vocational development, starting early in childhood and progressing up to retirement. The definition of the competencies and the related stages constitutes the backbone of this study's concept of vocational development.

The consecutive *'stages'* of this model process of vocational development are outlined below. They can be roughly characterized by achievement of the following competencies:

1. *Vocational Awareness:*
   Introduction to the role of a productive worker through
   a) an understanding of work as a basic anthropological trait of human life,
   b) familiarization with the general nature of a working life,
   c) an understanding of the variety of occupational interests, skills, values, and needs,

d) insight into the specificity of occupational requirements for a particular job,
e) an understanding of differences in life-style among occupational groups.

2. *Vocational Systematization:*
Introduction to the organization of the division of labour in society and to the potential for different qualifications in an individual through

a) familiarization with a variety of occupations to broaden career options,
b) an understanding of approaches to job task analysis,
c) the development of an overall understanding of the labour market,
d) insight into criteria for reflecting upon one's own vocational self-concept,
e) knowledge of the interdependency of individual aspirations and social demand.

3. *Vocational Experimentation:*
Introduction to the exploration of occupational roles in relation to the occupational self-concept through

a) an understanding of the benefits of experiential learning in a real work environment,
b) opportunities of participating in real work experience,
c) an understanding of criteria for actually exploring the role of worker,
d) prepreparation for coping with the functional and extra-functional requirements of a work situation.

4. *Employability:*
Introduction to work at the entry level of the labour market (alternatively introduction to further education) through

a) the acquisition of functional and partly also of extra-functional entry level skills,
b) insight into the career possibilities behind entry level jobs,
c) an understanding of the choice between employability training and further education,

d) recognition of the provisional character of occupational choice and consequently of the emphasis on transferable skills,
e) the acquisition of job seeking skills.

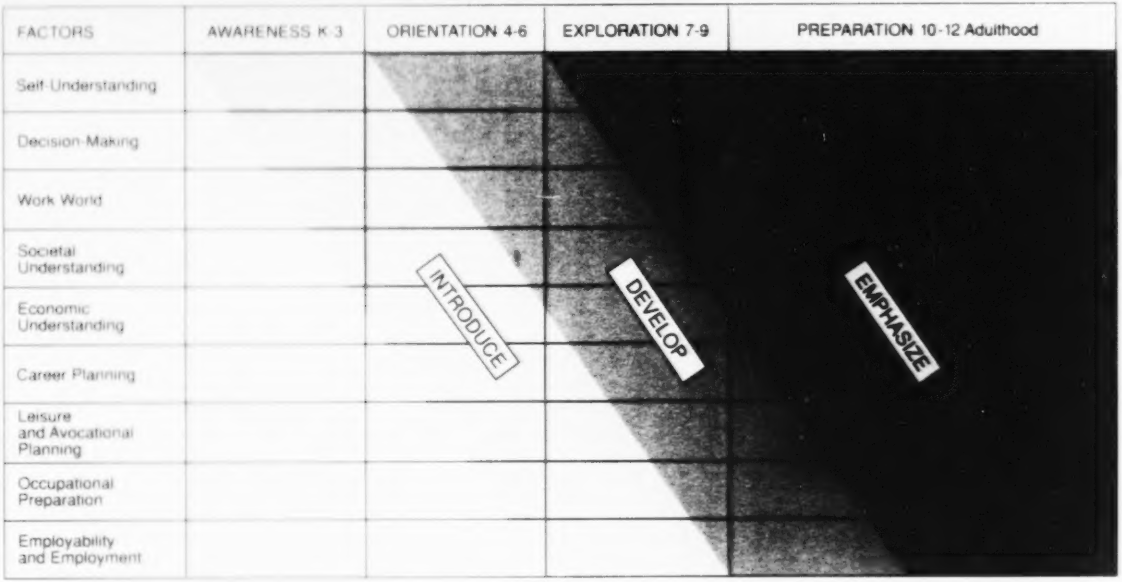
These stages should be continued through 'vocational growth', 'vocational stability', 'vocational maintenance' and 'vocational decline', up to the stage of 'preretirement' (Campbell 1979). However, the information on the further stages of vocational development provided in the case studies has not been sufficient to conduct a comprehensive analysis and the study has therefore been largely confined to the analysis of curricula for the first four stages of vocational development from 'vocational awareness' to 'employability'. Some very distinctive programme elements beyond 'employability' have nonetheless been included in the overview without particular emphasis in the analysis. These programme elements are 'further training', 'upgrading' and 'retraining'.

This approach proved to be a necessary compromise. On the one hand, case study information beyond the stage of 'employability' was not substantial enough to continue with a detailed design; on the other hand it was vital for the perspective of lifelong vocational development in the study to proceed beyond 'employability' and to present at least a few later programme elements. It is, therefore, suggested that further work should focus on the stages from 'vocational growth' to 'preretirement'.

In principle all stages from 'vocational awareness' to 'preretirement' are consecutive, but not so that one stage must be terminated before the next one is begun. Although, for instance, vocational awareness should have been created before an individual attains systematic orientation in the world of work, this awareness is continuously enriched over a lifetime by new insights into the relationship between man and his work. This process should therefore be envisaged as being open-ended at all stages, as is shown in Figure 1.

The definition of the 'stages' should be viewed as constituting one of the two main components of a blueprint for a model programme of vocational development. For proceeding from 'stages' of vocational development to the discussion of 'environments' of vocational learning as the second main component it should be noted that each learning experience is marked for the learner by a particular time in his life and a particular

CAREER DEVELOPMENT PROGRAM PLANNING
SCOPE AND SEQUENCE



FACTORS	AWARENESS K-3	ORIENTATION 4-6	EXPLORATION 7-9	PREPARATION 10-12 Adulthood
Self-Understanding				
Decision-Making				
Work World				
Societal Understanding				
Economic Understanding				
Career Planning				
Leisure and Avocational Planning				
Occupational Preparation				
Employability and Employment				

Source: Joel H. Magisos, *Career Education*. Washington., D.C.: AVA, 1973, p. 8a.

Figure 1: Stages of Vocational Development

place of learning. Regarding the time of learning, consecutive stages which respond to the specific development needs over a lifetime have been defined above. A definition of places of learning on the basis of changing development needs over a lifetime is not yet feasible. In the absence of such a comprehensive theory of environments of learning, this study will pursue an approach of defining learning environments according to the type of learning which they enhance most effectively. This necessarily leads to structural differences between the differentiation of 'stages' and 'environments', but no further discussion of these differences is offered here.

4.2. Learning across the Lifespace: The Environments of Vocational Development

It has been a misconception of education for work that effective vocational learning can only be provided by institutions which are intended for learning, such as the classroom or the training centre. Other environments, it is believed, which are not primarily designed for the acquisition of knowledge, attitudes and skills do not adequately foster, and may even misdirect, learning potential.

Research findings, especially those of the IEA Studies, have already corrected in cross-cultural perspective this misleading perception of the school as the principal agent for learning (*Comparative Education Review 1987*). The home variables of learning have proved to be more powerful in stimulating or blocking learning processes than the highly structured and thoroughly intentional learning experiences in the school, and a similar impact can be assumed from learning at the workplace.

Different learning environments lend themselves to different aspects of learning, particularly in preparation for work. Yet we are still quite uncertain about the decisive factors indicative of the quality of learning in a particular environment. Since a comprehensive and consistent taxonomy of learning environments is still missing, this study has largely to rely on a descriptive approach. But even these preliminary insights already disclose that certain types of learning correlate in their effectiveness with certain learning environments (see Figure 2).

As a historical starting point, as late as the 19th century we see an identity between the place of work and the place of learning how to work. However, after the recognition in the last century that the mastering of practical skills can also be conveyed through theoretical instruction, more and more learning contents have been withdrawn from the actual place of work to seemingly more effective instruction in isolated learning environments.

In spite of a growing theoretical orientation due to the introduction of modern technologies, the effectiveness of such isolated instructional processes has become questionable, especially in the past two decades. Education for work in the classroom is usually less stimulating and lacks the socio-psychological influence factors of the work environment. Hence vocational learning has increasingly been shifted back to the workplace. For this reason, special attention is devoted in this study to out-of-school learning.

Beyond the rough distinction between in-school and out-of-school learning environments a detailed differentiation has evolved from educational experience. No longer is theoretical learning synonymous with the classroom, and skill training can no longer exclusively be identified with the workplace. Instead, a variety of learning environments have been designed to fulfil very specific learning functions within the scope of a diversified range of different aspects of learning.

In in-school learning the laboratory is increasingly serving as a mediator between the classroom and the school workshop in satisfying the need for experience-based learning. The demonstration laboratory typically allows the teacher to elucidate phenomena from the natural sciences and from technology by visual impact while the practice laboratory offers additional opportunities for student experimentation.

Out-of-school learning environments have also undergone further differentiation. Due to the increasing complexity of skills, separate training facilities have been established at many workplaces, and where such a place of learning cannot be provided central training facilities serve as the resource base for a region.

As a consequence of this detailed differentiation of learning environments there is no longer a contrast between the school's function of providing a zone which is free from the influence factors of the economy and other interference with teaching, and the intention of out-of-school settings to provide exposure to the actual influence factors of the world of work. Both sets of environments have learnt from each other and have adopted some characteristics from each other up to the point that highly differentiated sets of learning environments have developed around the two archetypes.

The whole range of different learning *'environments'* is outlined below according to the specific learning potential they can provide:

I. *In-School Learning Environments*
The distinctive feature of in-school learning environments is their high degree of protection from any influences which could interfere with the teaching and learning process. This is combined with the attempt to serve learning in a community of learners.

1. *Classroom*
The classroom is particularly suited for instruction in more complex and abstract topics. It is characterized by
- an overall design geared towards learning rather abstract contents,
- learning aids such as blackboard, overhead projector, etc.

2. *Demonstration Laboratory* *
The demonstration laboratory is particularly suited for visual and other reinforcement of the understanding of complex scientific and technological phenomena. It is characterized by
- an overall design geared towards learning through understanding demonstrations,
- sophisticated equipment for demonstrating physical, chemical or other effects.

3. *Student Experiment Laboratory* *
The student experiment laboratory is particularly suited for student activities in observing scientific and technological phenomena. It is characterized by
- an overall design geared towards learning by carrying out experiments,

- sophisticated equipment for carrying out student experiments.

* Note: The degree of differentiation in this study did not allow for the sustained distinction of demonstration laboratories and student experiment laboratories as separate categories of learning environment. Demonstration laboratories have been included in the category of classrooms while student experiment laboratories have been incorporated in the school workshop category.

4. *School Workshop*

The school workshop is particularly suited for the guided hands-on activities of students. It is characterized by

- an overall design geared towards learning by carrying out hands-on activities,
- equipment and tools for hands-on activities.

5. *Production Facility at the School*

The production facility at the school is particularly suited for student involvement in agricultural, craft or industrial production processes. It is characterized by

- the genuineness of its purpose of production despite its location within a school,
- similarity between its physical setting and that of out-of-school production facilities.

II. *Out-of-School Learning Environments*

The distinctive feature of out-of-school learning environments is their high degree of similarity with real work settings, in particular with the socio-psychological dimensions of the world of work. This is combined with the attempt to create an identity between learning and working.

1. *Central Training Facility*

The central training facility is particularly suited for accommodating the more complex training needs of trainees in small enterprises which are not equipped for comprehensive or specialized training functions. It is characterized by

- an overall design geared towards skill training in complex techniques,

- equipment and tools for carrying out complex techniques.

2. *Training Facility at the School*

The training facility at the workplace is particularly suited for carrying out training which cannot adequately be accommodated in the regular work process at the workplace. It is characterized by

- an overall design geared towards the acquisition of basic skills and skills not easily learned at the workplace,
- equipment and tools for carrying out work techniques which are not part of the establishment's regular work process.

3. *Workplace*

The workplace is the only environment described here which has not been specifically designed for a learning function, but since the cumulative outcome of all training initiatives is geared towards performance at the workplace it offers the advantage of a complete identity between learning and working. It is characterized by

- an overall design geared towards fulfilment of the establishment's work function,
- equipment and tools for carrying out that function.

Though the workplace has not been set up with a learning intention in mind, the merits of this atypical learning environment become more and more evident. Since the importance of the socio-psychological dimensions of preparation for work, such as punctuality, work discipline and behaviour towards supervisors and fellow workers has been recognized, it has become apparent that the simulation of these dimensions in isolated learning environments will always be insufficient. It is only through being exposed to actual work conditions that a trainee can authentically experience the real impact of the socio-psychological influence factors at the workplace.

Acceptance of this insight should not lead to a general retreat from in-school learning environments. Instead, it has to be recognized that the complexity of learning, especially in the field of modern technologies, always includes parts where thoughtful reflection or highly concentrated effort is needed and where too much distraction would arise in the work environment. Hence an environmental arrangement for learning is required in which different environments supplement each other. The strengths of all individual learning environments should be combined in order to optimize the total learning process.

This target can be achieved through *forming compound systems of learning environments* which encompass in-school and out-of-school learning. After the pace-setting work of Ferrin and Arbeiter on education-to-work linkages in the seventies (Ferrin and Arbeiter 1975) it has become apparent to what extent learning and working can be integrated if an appropriate framework is given. This integration should interlink all available learning environments in a flexible, individualized compound system.

Since there is the potential for learning in any life situation, any environment is a potential learning environment. Of course, actual learning finally depends on whether an individual is motivated to learn and is capable of exploiting the learning experience which is offered. Also, sometimes we may learn from the accidental observation of some effect without being aware of all the reasons behind it. In other cases we learn about all details of a physical or chemical phenomenon without ever having observed its practical application in work processes. Ideally, practical experience and theoretical learning should be integrated in a stimulating feedback open to individual learners through access from a variety of starting points.

The comprehensive differentiation of 'stages' and 'environments' which has been unfolded here does not mean that they should be viewed separately. It is the linkages between 'stages' and 'environments' which make our learning profound. Certainly a well-planned selection of 'environments' for initiating learning events in 'vocational awareness' will be different from one destined for the environmental needs of 'employability'. Furthermore, in both cases truly effective learning will not be mono-environmental but has to utilize a combination of different environments in a compound system of learning. The workplace, for example, might be well suited to the acquisition of functional skills, but at the same time it will be important to explain to the student the interrelationship of different kinds of skill needed for successful performance at the workplace, and for this explanation the classroom is much better suited than the workplace (see Figure 2).

TYPE OF LEARNING	LEARNING ENVIRONMENT
Abstract Learning	Classroom
Learning Structured Contents through Demonstration	Demonstration Laboratory
Learning Structured Contents by Doing	Student Experiment Laboratory
Learning Basic Functional Skills	School Workshop
Learning Functional and Extrafunctional Skills in Work Environments Monitored by the School	Production Facility at School
Learning Complex/Rare Functional Skills (with Expensive Equipment)	Central Training Facility
Learning Basic or More Complex Functional Skills	Training Facility at workplace
Learning Functional and Extrafunctional Skills in Real Work Environment	Workplace

Figure 2: Correlation between Types of Vocational Learning and Different Learning Environments

This diversification of learning scenarios with multifold possibilities for linkages between 'stages' and 'environments' constitutes the arrangement for vocational learning. The operational level of this arrangement is not presented here. It is incorporated in the case studies in the country-specific form of 'transferable features of attempted reform'.

4.3. Towards Cross-National Cooperation: A Second Summative View

Vocational learning over the lifespan and across all the environments of intended learning of a lifespace has been mapped out here with its multifold possibilities for interlinkages. It is this differentiation of the 'principal descriptors' which was needed to establish a framework for cross-national cooperation.

The lifespan dimension has been detailed up to the stage of 'employability' since it is only up to this point that the concept of 'stages' is sufficiently supported by the case studies. The analysis of the further stages had to be limited to 'further training', 'upgrading' and 'retraining' as distinctive programme elements. This limitation does not imply that the later 'stages' of vocational development are less important.

The lifespace dimension has been detailed for all environments of intended vocational learning. The 'home' and the 'peer group', two important learning environments, have therefore not been included, nor are they part of the design of the case studies. The workplace as a source of informal learning has increasingly been incorporated in formal and non-formal programmes of vocational development and plays a prominent role in this study.

Both sets of 'principal descriptors' have been presented as the main components of the blueprint of a model process of vocational development. As indicated above, multifold interlinkages are applicable between 'stages' and 'environments'. These interlinkages will not be dealt with on the theoretical level of the 'principal descriptors'. Instead the following chapter provides a comprehensive view of these interlinkages in the case studies, i.e. on the level of 'transferable features of attempted reform'.

5. CROSS-NATIONAL EXPERIENCE IN VOCATIONAL EDUCATION: EXPLOITING THE TRANSFERABLE FEATURES OF ATTEMPTED REFORM

The overview of the 'transferable features of attempted reform' and the interlinkages between them which are presented here are intended to provide access to a vast potential for reform. By placing 'transferable features' and interlinkages in perspective, the cross-national context of suggested reform is revealed, but it must be stressed that the reform itself needs to focus on the country-specific experiences described in the case studies.

5.1. Appraising 'Stages' and 'Environments' of Vocational Development in the Case Studies

An overview of the representation of 'stages' and 'environments' in the case studies shows that none of the case studies encompasses curricula for all stages and programme elements of vocational development examined here, and nor does any one study draw upon all potential learning environments. The Dutch and the German case studies emphasize all the stages of vocational development up to 'employability', and the German Hibernia School also exhibits the widest degree of differentiation of learning environments by utilizing four out of six. environments defined here.

On the other hand all the seven case studies emphasize 'employability'. And almost all incorporate the 'awareness' stage of vocational development. (Only the Venezuelan project does not cover this stage; for the good reason that the students concerned are already in employment.) All other stages of vocational development are much less emphasized, as can be seen from the country by country overview which is presented below in Figure 3.

Nat. Case Study / Stage of Voc. Dev.	INCE Venezuela	Hibernia F.R.of Germ	Sarvodaya Sri Lanka	Nat.System Poland	Voc.Ed.Syst. Tanzania	CPSS USA	ICP Netherlands
Retraining	▩						
Upgrading	▩			▩			
Further Training	▩			▩	▨		
Employability	▩	▩	▩	▩	▩	▩	▩
Vocational Experimentation		▩		▨		▨	▨
Vocational Systematization		▩		▨	▨	▩	▩
Vocational Awareness		▩	▩	▩	▨	▩	▩

Legend: ☐ Not Emphasized ▨ Partly Emphasized ▩ Emphasized

Figure 3: Overview of 'Stages' of Vocational Development Emphasized in the National Case Studies

With regard to the utilization of different learning environments, it has become generally accepted that skill training can only be achieved sufficiently when the 'workplace' is involved. Hence the 'workplace' is emphasized in all case studies, followed by the 'classroom', which still appears to be a standard environment in education for work. All other learning environments are considerably less favoured, as demonstrated by the country by country overview which follows in Figure 4.

The country by country overviews of 'stages' and 'environments' of vocational development have demonstrated the diversity of the case studies. Yet this study attempts to supersede this diversity by promoting the cross-national exchange of educational experience. The 'principal descriptors' which have been elaborated in the preceding chapter are instrumental in establishing platforms for cross-national communication by delineating comparable elements within the case studies. On all levels of the 'principal descriptors', such as 'career awareness' or utilization of the 'workplace' as a learning environment, the country-specific potential for reform has to be tapped. In this context, the interlinkages between these descriptors are of central importance. It must, therefore, be the aim of this synthesis to point out the range of interlinkages between these central components of attempted reform.

5.2. Interlinkages between 'Stages' and 'Environments' of Vocational Development

The case studies have been appraised in order to arrive at an overview of the interlinkages between the 'stages' of vocational learning and all the 'environments' concerned. Next, the emphasis placed on each 'stage' of vocational development has been rated from the perspective of each learning environment (see note under Figure 5). The information for this cumulative overview is derived from the standardized 'Figure 1' for each case study which is included in the brief analysis preceding the case study report. This part of the appraisal provides an insight into the emphasis placed on each interlinkage. However, the question of which interlinkages between 'stages' and 'environments' are desirable is not further explored here. It should be noted that the overview is not meant to imply that *any* combination of a 'stage' and an 'environment' is necessarily desirable.

Nat. Case Study Environm. of Voc. Dev.	INCE Venezuela	Hibernia F.R.of Germ.	Sarvodaya Sri Lanka	Nat.System Poland	Voc.Ed.Syst Tanzania	CPSS USA	ICP Netherlands
Workplace	▩	▩	▩	▩	▩	▩	▩
Training Fac. at Workplace	☐	☐	☐	☐	☐	☐	▨
Central Train. Facility	▩	☐	▩	☐	☐	☐	☐
Production Fac. at School	☐	▩	☐	☐	▩	☐	☐
School Workshop	☐	▩	☐	▩	☐	▨	☐
Classroom	▩	▩	☐	▩	▨	▩	▩

Legend: ☐ Not Emphasized ▨ Partly Emphasized ▩ Emphasized

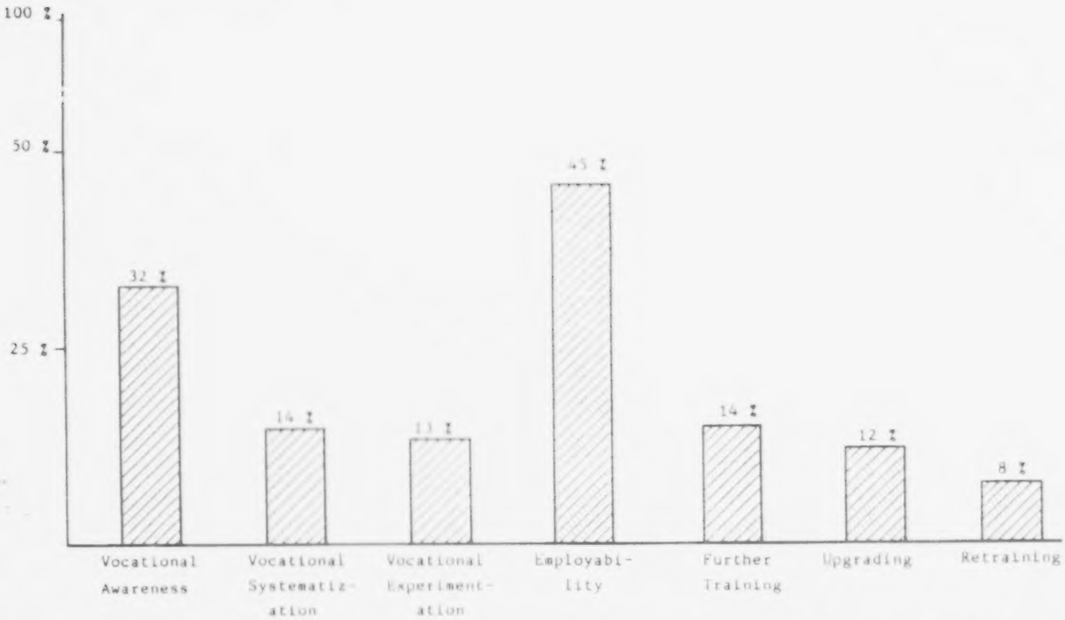
Figure 4: Overview of 'Environments' of Vocational Development Emphasized in the National Case Studies

Figure 5 indicates that even among reform curricula the stages of 'vocational systematization' and 'vocational experimentation' have still not established themselves as indispensable components of a curriculum sequence of vocational development. This low emphasis on vocational development between 'awareness' and 'employability' is extremely marked in the Sri Lankan and the Tanzanian case studies. Both reform projects realize the importance of 'vocational awareness' and 'employability' and emphasize these developmental stages, but due to the general scarcity of resources in developing countries no priority can apparently be given to 'vocational systematization' and 'vocational experimentation' as necessary stages preceding 'employability'. As already explained, the low emphasis on the programme elements beyond 'employability' will not be further discussed.

The complete range of contents for all 'stages' is essential for a process of vocational development based on the 'informed self-determination' of the individual, a process in which societal, community and individual interests are explicitly conveyed to the students. The omission of any part of this process -- such as information about possible occupational choice or the capability to recognize one's own vocational competencies and aspirations (see Ch. 4.1.) -- must result in severe shortcomings in an individual's vocational development.

Consequently, the question arises to what extent developing countries in particular can afford to further all necessary facets of a vocational development process. With 'employability' as the ultimate aim of preparation for entry into the world of work, and with 'vocational awareness' as the recognized agent for opening up an individual's vocational potential, it is foreseeable that any cuts in programme planning are likely to be inflicted on 'vocational systematization' and 'vocational experimentation'.

To supplement the overview of 'stages' and programme elements presented in Figure 5, the emphasis placed on the 'environments' of vocational development has been compiled. Again the rating is based on the allocation of emphasis points (see note under Figure 6). And again it has to be stressed that this figure does not imply that any combination of a 'stage' and an 'environment' is desirable.



Note. In calculating these percentages, one point was given each time a 'stage' or programme element was emphasized in one of the six potential learning environments analyzed in the case studies, and half a point if it was 'partly emphasized'. With six learning environments in seven case studies the possible maximum is 42 emphasis points, equivalent to 100 %.

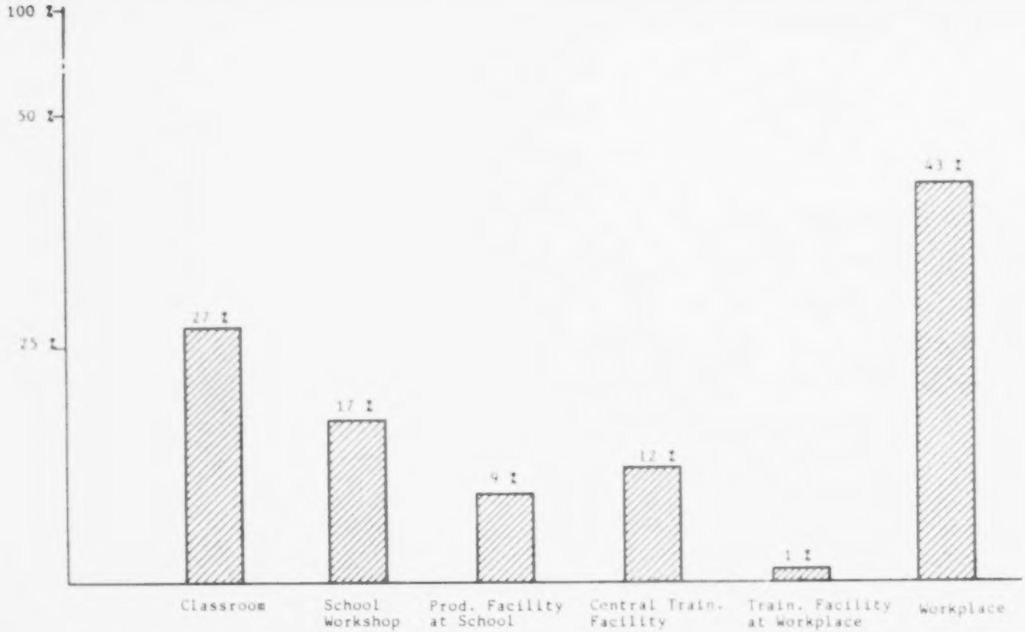
Figure 5: Cumulative Overview of Emphasis Allocated to the Stages and Programme Elements of Vocational Development in the Study's Six Learning Environments

Comparable to the unbalanced emphasis on the different 'stages' of vocational development, the use made of learning environments is also marked by a rather unequal distribution. 'Classroom' and 'workplace', at the two extreme ends of the spectrum, are highly emphasized, with much less attention paid to the more differentiated forms in between. And again it is the developing countries presented in this study which make very little use of learning environments other than 'classroom' and 'workplace'. The high costs and extensive organizational network needed are presumably the reasons for the low representation of 'school workshops', 'central training facilities' and 'training facilities at the workplace'. Only the production facility at the school has recently gained in emphasis, since its advantages in saving costs have been realized.

The whole spectrum of learning environments should be responsive to the various needs of effective learning. Vocational learning covers the whole gamut of learning contents: cognitive, affective and psychomotor. From the classroom, in which the more abstract contents of job-related knowledge are conveyed, to the workplace where trainees learn job-coping skills, all learning environments have their particular strengths in reinforcing specific types of learning (see Ch. 4.2). Hence omission of a learning environment is likely to cause a lack of effectiveness in a certain type of learning. Yet the degree to which learning environments can be diversified to form compound systems is finally a question of concepts, organizational possibilities, politics and costs. The emphasis attributed to vocational learning in the classroom and at the workplace is surely to some degree due to the low costs of maintaining these environments: the workplace is there anyhow and the classroom remains the least expensive in-school learning environment (see Figure 6).

After the foregoing appraisal of the emphasis placed in the case studies on the interlinkages between 'stages' and 'environments' of vocational development, it remains to be examined whether predominant types of interlinkage between the two sets of 'principal descriptors' exist. A comprehensive view of the interlinkages is therefore presented in Figure 7. It concludes this overview.

This overview demonstrates that regardless of different combinations of curriculum areas in the case studies, certain combinations of 'stages' of vocational development and learning



Note. One point was given each time a learning environment was emphasized in one of the seven potential stages or programme elements analyzed in the case studies, and half a point if it was 'partly emphasized'. With seven stages and programme elements in seven case studies the possible maximum is 49 emphasis points, equivalent to 100 %.

Figure 6: Cumulative Overview of Emphasis Allocated to the Learning Environments of Vocational Development in the Study's Seven Stages and Programme Elements of Vocational Development

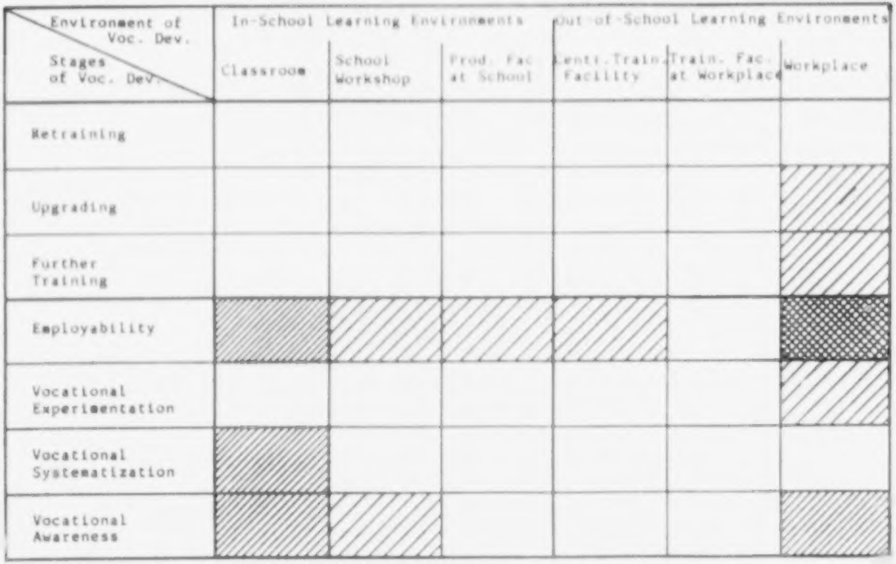
'environments' prevail. 'Vocational awareness' and 'employability', the two most common stages of vocational development, rely predominantly and to about the same degree on the 'classroom' and the 'workplace' as learning environments. 'Vocational systematization' is mainly confined to the classroom except for a moderate utilization (1 1/2 emphasis points) of the school workshop. Altogether, the workplace is definitely the most important learning environment in the case studies.

It is obvious from these results how difficult it is to attain a balanced representation of all dimensions of the reform of education for work. Of course, the reorientation of education for work in accordance with the concept of lifelong vocational development, of which the basis has been outlined in this synthesis with the aid of the 'principal descriptors', becomes considerably more difficult at the operational level of the 'transferable features'. Some guidelines for the exploitation of the 'transferable features' have therefore been presented with the overviews which have been provided here. It is recommended that the theoretical background of the 'principal descriptors' is always consulted as a guiding principle.

5.3. Towards Defining and Applying 'Transferable Features of Attempted Reform' in the Case Studies

The central goal of this study has been to establish a framework for the reform of education for work from the conceptual down to the operational level of curriculum development. On the conceptual level 'stages' and 'environments' of vocational development have been established as 'principal descriptors'. On the operational level the case studies have provided an extensive elaboration of these descriptors in the concrete form of 'transferable features of attempted reform'.

The analysis of the case studies reveals that the 'stages' and 'environments' represent important tools for describing the basic curriculum structure of the projects which have been presented here. Furthermore, the elaboration of 'transferable features' has provided adequate access to an understanding of the supra-national contribution of country-specific experience to the reform of education for work. However, in attempts to facilitate cross-national exchange of experience in curriculum development by utilizing 'transferable features' as vehicles for reform, it should be borne in mind that the case studies vary considerably in the distribution of 'stages'



Environment of Voc. Dev. / Stages of Voc. Dev.	In-School Learning Environments			Out-of-School Learning Environments		
	Classroom	School Workshop	Prod. Fac. at School	Centr.Train. Facility	Train. Fac. at Workplace	Workplace
Retraining						
Upgrading						▨
Further Training						▨
Employability	▩	▨	▨	▨		▦
Vocational Experimentation						▨
Vocational Systematization	▩					
Vocational Awareness	▩	▨				▩

Legend: □ 0 - 1 1/2 ▨ 2 - 3 1/2 ▩ 4 - 5 1/2 ▦ 6 and more

Note. One point for each emphasis per 'stage' and 'environment', 1/2 point for those 'partly emphasized'

Figure 7: Comprehensive Overview of Interlinkages between 'Stages' and 'Environments' of Vocational Development Involved in the Seven Case Studies

and 'environments'. In many cases the dimensions of experience in one project will encounter a 'vacuum' in another project. 'Vocational systematization' in the Netherlands will, for example, not find a comparable part in Sarvodaya's programmes in Sri Lanka. However, the rationale for maintaining a programme phase of 'vocational systematization' across national differences has been provided before, and it may therefore be assumed that Sarvodaya can benefit from the Dutch experience. This is where the design of *transferable features* comes into full relevance and where country-specific experience offers its potential for reform on the basis of 'experiential borrowing'.

Since it is the meliorative effect of the 'transferable features of attempted reform' in education for work which lends direction to the cross-national curriculum development proposed here it is regrettable that only limited experience could be recorded for features such as 'vocational systematization'. It is hoped that further investigation on these lines will be undertaken by other vocational education reform projects.

6. SUMMARY AND OUTLOOK

This study has set out to find a conceptual and operational answer to the crucial issue of reorienting education for work. Between the conceptual answer and its translation into operational terms the methodological problems which have made work so difficult for vocational education planners had to be addressed. For this purpose 'experiential borrowing' has been introduced as a concept which attempts to reconcile the planner's need for action with a firm theoretical base.

Since it has been found possible to suggest an approach for the cross-national transfer of vocational education experience it is not necessary to condense the valuable information contained in the case studies into this synthesis. The case studies stand by themselves, and this synthesis is designed as a 'manual' for tapping their rich resources of country-specific experience.

In order to make optimal use of country-specific experience for the reform of education for work in a supra-national context, the synthesis has concentrated on the following three areas:

- the definition of the 'principal descriptors' for a reorientation of education for work towards lifelong vocational development,
- the development of the methodological outline for cross-national work in curriculum development,
- the presentation of the case studies' 'transferable features of attempted reform' in a comparative perspective.

In following this structure, the overriding goal of this study has been to supersede national differences in dealing with common problems and to pursue common targets in the reform of education for work. Yet this approach should not be mistaken for neglect of the uniqueness of each case study. From the brief analysis preceding each case study to the elaboration of country-specific features in the case studies themselves a detailed account has been provided of their uniqueness. Among these country-specific details the following are of particular importance:

- INCE (Venezuela): the programmes are administered by a government-controlled foundation,
- Hibernia (Federal Republic of Germany): the design of the instructional programme is based on a distinctive philosophy of man,
- Sarvodaya (Sri Lanka): the community is perceived as the basis of development,
- National System (Poland): access to higher education is provided through promotional stages within the education system,
- Vocational Education System (Tanzania): self-reliance is advocated as the fundamental concept in education,
- CPSS (USA): guidance is perceived as the central component of vocational development,
- ICP (Netherlands): a highly individualized approach to learning is implemented in order to overcome school boredom.

But the uniqueness of the curricula involved in this study has not been the central concern. Parameters for the reform of education for work have been designed across countries and across differences in intention as well as across discrepancies in socio-cultural background. Finally, valuable experience has been documented in the form of 'transferable features of attempted reform'.

Once the 'principal descriptors' and 'transferable features' had been established, the suitability of 'stages' and 'environments' of vocational development to carry these functions could be sufficiently demonstrated:

- Both sets of 'principal descriptors' are easily traceable in all the case studies, from the instructional programme of a single school to the curricula of national systems of vocational education.

Furthermore, the degree of differentiation of the two sets of descriptors seems to be substantiated enough to encompass all distinctive sub-descriptors.

- Both sets of descriptors allow for a sufficiently elaborated system of sub-descriptors and therefore for the structured description of the vocational experience in different countries.

And finally, the country-specific profiles of 'stages' and 'environments' of vocational development can assuredly be used as 'transferable features of attempted reform' to facilitate the cross-national exchange of experience in curriculum development.

- The 'transferable features of attempted reform' provide vehicles with which educational experience can be transferred from one country to another, either through the corresponding ''features' or by projecting one 'feature' into an underdeveloped or non-existant curriculum area in another country.

In this context the intention has been to clarify the procedure for the transfer of know-how in vocational education projects for curriculum development. This pressing need in international and cross-national projects had so far not been given enough attention in research and development. To establish well-planned cooperation in this field the following steps are suggested:

* presentation of a given system of vocational curricula in terms of 'stages' and 'environments',
* comparison of the curricula presented with the ideal range of 'stages' and 'environments' as developed in the form of 'principal descriptors',
* identification of the 'stages' and 'environments' which are to be targeted as areas for intensification or reform,
* selection of education for work curricula which offer possible models for reform,
* presentation of the selected models for curricular reform in terms of 'stages' and 'environments',

- analysis of the experience gained from these models for curricular reform,
- formation on the basis of 'transferable features of attempted reform' of a basis for cooperation between the curricula targeted for improvement and the selected models for curricular reform,
- adaptation of selected components from the models for curricular reform on condition that they show positive results under evaluation.

It is hoped that this approach can provide valuable assistance to the vast field of cross-national work in vocational education curriculum development, and beyond it to the reform of education for work.

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THE VENEZUELAN CASE STUDY

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. PROFILE OF THE CASE STUDY

The Venezuelan case study focuses on employability programmes in the non-formal sector of education and training. It serves as an example also for other Latin American countries since it is typical of these countries that state-controlled foundations (usually called the National Institute for Educational Co-operation, INCE) have been set up to fulfil the demand for skilled and semi-skilled manpower. Assisted by compulsory financial contributions from industry, these institutions have been able to provide efficient programmes for skill training in a setting similar to the European apprenticeship schemes.

Under the auspices of the Venezuelan Ministry of Education INCE employs a full-time staff of about 3,000. The total enrolment in all training programmes amounted to 36,000 in 1985. The emphasis is clearly on employability training for the 14 to 17 age-group through the National Apprentice Training Programme (NATP), but basic skill training is also provided outside the quasi-apprenticeship scheme for the age group from 18 up. Furthermore, INCE offers courses for training semi-skilled labour, for upgrading and supplementary training, for training supervisors and instructors and for continuing education via mail, radio and television. A certification system provides the links with the system of formal education (see Table 1).

2. STAGES OF VOCATIONAL DEVELOPMENT

Through its constitution INCE is mainly responsible for supporting the employability sector of the vocational development process. A positive attitude towards the role of worker, the careful selection of an occupation corresponding to an individual's abilities and aspirations and early acquisition of extrafunctional skills such as punctuality, cooperation and dedication to work have to be initiated at earlier stages of vocational development. Regarding this point INCE has to rely mainly on services provided by the system of formal education.

Table 1: Profile of the Venezuelan Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula of a national system of non-formal vocational education
Age Group Served	Emphasis on the age group 14 to 17 years, in general from 14 up
Sponsor of the Programme	INCE is a state foundation controlled by the Ministry of Education
Intention of the Programme	Dominant focus on employability training in a quasi "dual" setting (apprenticeship, combination of classroom instruction and on-the-job training); skill training on all levels for semi-skilled and skilled occupations
Specific Traits	Utilization of compound systems of different learning environments for effective skill training Partial funding of the programme through compulsory contributions from industry

The following structure of vocational development activities can be drawn up if all programmes offered by INCE and the prevocational courses offered by the public schools are taken together:

Vocational Awareness (Public Schools): In the six years of primary education one hour weekly of instruction in handicrafts is supposed to generate some vocational awareness. But most of these activities are connected with the household; a systematic awareness programme is not provided.

Vocational Systematization and Experimentation (Public Schools): At the level of the three-year cycle of lower secondary education two hours weekly are allocated for all students for exploratory programmes in industry, commerce, home economics, fine arts and agriculture. No actual work experience is provided and the function of finding out one's own abilities can therefore only partly be fulfilled. Aspects of vocational systematization and experimentation are only encountered on a cognitive basis.

Vocational Employability: In the two-year cycle of higher secondary education vocational options are offered to impart basic skills at the semi-skilled level. About one fifth of the higher secondary student population select a vocational programme and thereby pass through an initial phase of employability training.

Intensive employability training is provided by INCE for young workers either within the National Apprentice Training Programme or in the form of basic skill training. These programmes are the core of vocational training in Venezuela. A system of well-defined training programmes aims at the acquisition of competencies at the skilled and semi-skilled level.

Further Training and Upgrading: INCE offers specialized training courses for highly skilled craftsmen, supplementary training courses for skilled workers who want to widen the scope of applicability of their competencies and upgrading courses for craftsmen who have to cope with fast changing technologies in their occupation.

These training programmes supplement INCE's employability programmes to form a comprehensive system of non-formal training courses for skilled and semi-skilled manpower.

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT:

Vocational development activities in the system of formal education make only limited use of learning environments other than the classroom. At the level of basic education (six years of primary education plus three years of lower secondary education) only few schools have special classrooms for handicrafts and prevocational education. Some skill training is done in school workshops in the two years of higher secondary education (senior high school), but these courses are offered as options and only a small portion of the student population profit from the hands-on experience.

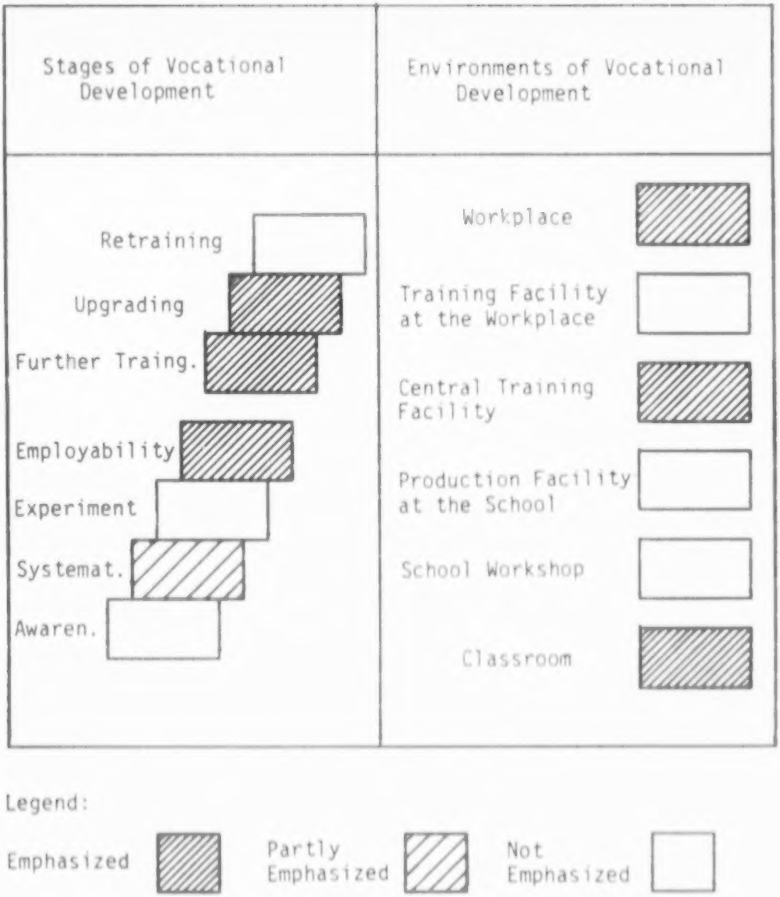
The full exploitation of the advantages of a diversified arrangement of learning environments in INCE's training programmes indicates again that the main emphasis of vocational development activities in Venezuela is concentrated at this level. INCE's programmes are clearly experience-based. Even for the part of apprenticeship training which takes place in an INCE centre 50 per cent of the instructional time is allocated to practical work. A one-year programme at the INCE centre is followed by one to two years of inservice practice before a diploma of completion can be acquired.

At the INCE centre instruction both in general education and related technologies and in practical work has a compound system of learning environments at its disposal:

- For instruction in general education and related technologies the following learning environments are provided: a classroom with all the equipment necessary for instruction in general education, a laboratory for instruction in physics and a special classroom for individualized study of related technologies.

- For practical skill training the following learning environments are provided (e.g. in electrical maintenance): a workshop for basic mechanics and electricity, a section of a workshop with modular cabins for lighting and electrical power installations and an electricity laboratory with teaching models.

The differentiated arrangement of learning environments implemented by INCE in theoretical instruction and practical


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the Venezuelan Case Study

skill training permits an effective utilization of the didactic strength of the particular learning environment. The degree of differentiation in learning environments is indicated by the use of laboratories both in the natural sciences (physics) and in related technology (electricity laboratory).

4. DISTINCTIVE FEATURES OF THE CASE STUDY

Venezuela is attempting to provide effective employability training as a joint enterprise of a central training agency (INCE) and the employing industries. Typically, training of this kind would rely on a historically developed structure such as the European apprenticeship schemes, where the crafts and later industry have since the Middle Ages established their own self-governing entities. Such a structure does not exist in Venezuela. Instead of voluntary self-administration of training in the crafts, Venezuela has established its employability programmes on the basis of compulsory financial contributions from all industries. These contributions allow INCE to provide the administrative and instructional services needed.

Another difference between INCE's National Apprentice Programmes and European-type apprenticeship lies in the administration of theoretical instruction. When the technical background of European apprenticeships became too complex in the past century, the system of formal education adopted the function of providing related theoretical instruction on a part-time basis, usually for one or two days per week. Contrary to this involvement of the system of formal education, INCE itself is in Venezuela responsible for teaching general education and related technologies in its own training centres.

Hence, apprenticeship training is confined to the non-formal sector of education. Links with the formal system of education are provided by the certification system.

INCE carries out manpower research in cooperation with the Ministry of Labour, but no research is conducted on extra-functional skills which are prevocational in nature. Together with the low priority given to prevocational programmes in the schools this research orientation demonstrates that hard core skill training lies at the heart of vocational development in Venezuela. Employability training is provided on a differentiated and intensive level.

NON-FORMAL VOCATIONAL TRAINING IN VENEZUELA

THE ROLE OF THE NATIONAL INSTITUTE FOR EDUCATIONAL COOPERATION

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Venezuela

1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT PROGRAMMES

1.1. Geographic and Demographic Situation and Socio-Economic Structure

Venezuela is located on the northern reaches of the Caribbean shores of South America, extending over an area of 916,490 sq. kilometres. It borders on Colombia in the west and southwest, on Brazil in the south, and on Guyana in the east. It has a population of about 15 million inhabitants, three million of whom reside in the capital city of Caracas. Climatic zones vary from tropical to subtropical, depending on altitude. There are two seasons: the rainy season (June to November) and the dry months (December to May). The topography is dominated by three mountain ranges, of which the Andes is the most important, and by well over one thousand rivers, the Orinoco with a length of almost 3,000 kilometres, of which 1,670 are navigable, being the most outstanding. The Orinoco basin contains one of the largest known oil reserve deposits in the world.

Almost 80 per cent of Venezuela's total population are urban. The population growth rate was 3.4 per cent per year in 1982, and the age pyramid shows that the country's human resource base is extremely young, a fact that underlines the importance of vocational training programmes: 54.1 per cent of the total population are under 20 years of age; 17.5 per cent are in the 20-29 age group; 10.2 per cent are between 30 and 39 years old; 7.9 per cent are in the 40 to 49 age category; and only 10 per cent belong to the 50 plus group. The gross death rate has been constantly decreasing to reach the present annual figure of about 6 per thousand.

Economically active persons (15 years and over) represent some 25 per cent of the total population. The per cent distribution of the labour force by economic activity is estimated to be as follows: agriculture 18.9; mining and petroleum 1.2; manufacturing 19.3; construction 6.6; public utilities 1.9; commerce 16.2; transportation 5.8; and services in general

31.1. The illiteracy rate during the last decade averaged 19.5 per cent, and the total student population constitutes 33 per cent of all inhabitants. Of the student population approximately 8.5 per cent are in pre-primary education; 60.3 per cent are in primary school; 23.0 per cent attend secondary institutions and 8.2 per cent are enrolled in higher education. Of all the children in the 4 to 6 age group, only 50 per cent are enrolled in pre-primary education and the first grade of primary school; on the other hand, 86 per cent of all children in the 7 to 12 age group are attending school, while only 62.6 per cent in the 13 to 15 age group are being taken care of by the formal system. In terms of dropout, 39 out of 100 students enrolling in the first grade of primary school leave the formal education system with a total of nine years or less of schooling. The GNP for 1983 amounted to US $ 70,820 Mill. or the equivalent to US $ 4,100 per capita.

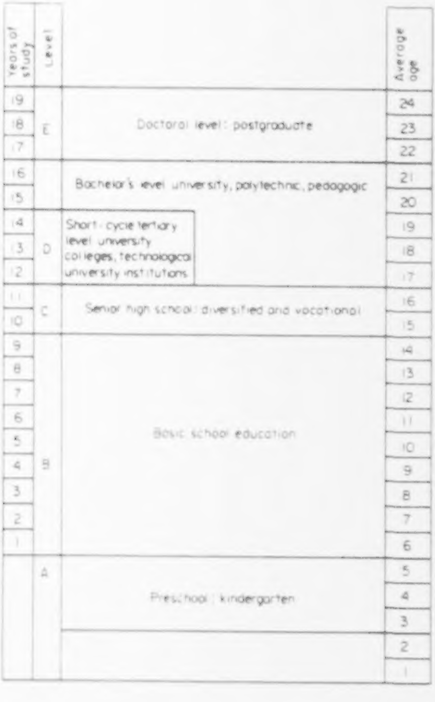
1.2. The Formal Education System

The origin of compulsory and free mass education at the primary level dates back to a decree issued in 1870 by the Venezuelan President Guzmán Blanco, but large scale expansion of the school system was not achieved until the last few decades. Enrolment in primary education more than quadrupled between 1952 (less than 560,000 pupils) and 1982 (more than 2.4 million pupils). In secondary education there was a tenfold increase in enrolment during the same timespan, reaching more than 1 million students in 1982. In higher education expansion has been marked by diversification; the number of institutions of higher education was up from only 6 in 1957 to 68 in 1982.

The structure of the present system of formal education encompasses nine years of compulsory basic education (six years primary education plus three years lower secondary education). The secondary education diploma is awarded after two more years in higher secondary education.

The whole formal system of education is centrally administered by the Ministry of Education. The National Institute of Educational Cooperation (INCE), whose programmes are appraised in this study, is also registered with the Ministry of Education, but it enjoys a high level of autonomy in its operation and control.

INCE is part of the non-formal education system. The main function within this system is to secure the employability and work efficiency of Venezuelans. Since employability should be preceded by vocational awareness, systematization and experimentation, an analysis of the degree to which educational experiences of these earlier stages are offered by the formal education system is presented in the following pages.


Years of study
Level
Average age
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
E
Doctoral level: postgraduate
Bachelor's level university, polytechnic, pedagogic
D
Short-cycle tertiary level university colleges, technological university institutions
C
Senior high school: diversified and vocational
B
Basic school education
A
Preschool: kindergarten
24
23
22
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18
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1

Source: Husén T., Postlethwaite, T.N. (eds.) *International Encyclopedia of Education*. Oxford, UK: Pergamon, 1985, p. 5426.

Figure 1: Structure of the Venezuelan Education System

2. CURRICULA FOR VOCATIONAL DEVELOPMENT WITHIN THE FORMAL EDUCATION SYSTEM

Vocational development is initiated through subjects in the formal system of education. A subject "trabajos manuales" (manual work) is included with one hour weekly in the timetables of all six years of primary school. However, only 5 per cent of the primary schools have special classrooms for instruction in this subject and only a small number of teachers have received special training for it.

The curriculum for "trabajos manuales" is mostly comprised of activities connected with the household, such as selection of food and style of living. Vocational awareness is limited to the perspective of the family. No provision is made for a systematic approach to vocational experimentation. It is generally felt that a great deal of improvement is needed and a law has been passed stipulating that all primary schools are to be equipped with special rooms for manual work and home economics.

In secondary education two hours weekly are allocated to prevocational education. In the first three years of secondary education students have to select two exploratory vocational areas each year. The areas for selection are industry, commerce, home economics, fine art and agriculture. Since a total of six areas has to be selected over the three years one of the areas is chosen twice.

In all these areas the curriculum is designed to impart to the students basic knowledge of processes and procedures in the selected area of economic activity. This instruction includes an introduction to the respective sector of the world of work to acquaint the students with occupational alternatives. However, no emphasis is laid on systematic vocational development and only few schools have special classrooms for prevocational instruction.

Contrary to mandatory instruction in prevocational education in the three-year common cycle of secondary education, vocational education is an option in the two-year diversified cycle of higher secondary education. Only 18.6 per cent of the students choose a vocational specialization while 81.4 per cent work for a Bacalaureate in the Sciences or the Humanities.

Out of the 18.6 per cent of the student population who select a vocational programme during the last two years of secondary education, 44.41 per cent opt for an industrial or craft specialization, 32.17 per cent join the commercial programme, 13.96 per cent receive initial training in home economics and services and 9.46 per cent are trained in agriculture (1982). An estimated 25 per cent of the instruction time in these programmes is devoted to practical work.

The goal of the vocational programmes in higher secondary education is to impart basic competencies at the semiskilled level in the field concerned. Thus they constitute an initial phase of employability training which supplements the aspects of vocational systematization that are part of the mandatory prevocational programme in the three years of lower secondary education.

On the whole it may be said that components of vocational awareness, systematization and employability are included in the curricula of the formal education system. However, none of these stages of vocational development is sufficiently emphasized to cover the whole range of necessary vocational experience for all students.

The actual thrust of vocational activities in Venezuelan education is on employability programmes in the non-formal sector of the education system. These programmes are administered by the National Institute for Educational Cooperation (INCE). A detailed analysis of the whole range of INCE's employability programmes is given below.

3. THE NATIONAL INSTITUTE FOR EDUCATIONAL COOPERATION (INCE) AND ITS ROLE IN PROVIDING NON-FORMAL TRAINING PROGRAMMES

3.1. The Conceptual Framework

The Institute was created in order to promote, organize and develop vocational training in Venezuela. The conceptual baseline lies on the full recognition of the crucial role played by the quality of manpower in the process of economic development. It is felt that training and inventiveness are more important to economic growth than modern machinery. Furthermore, it is firmly believed that vocational education and the emphasis on training and overall formation are indispensable tools for further technological advancement as well as for the solution of most social problems.

More specifically, the basic aim of the Institute has been conceived of as that of giving adequate training to workers already engaged in the production process and to individuals who are about to enter the labour market for the first time. It is believed that career opportunities should be provided through basic training and general education, as well as through upgrading and specialization. Hence, INCE's programmes cover a variety of crafts at different levels of skilled and semi-skilled competency - developed through inservice schemes and/or at training centres - by way of courses tailored to meet the training needs of the young and the adult worker in Venezuela. To offset current trends whereby young people prefer academic careers INCE is giving emphasis to the "dignification" of manual work and has achieved accreditation of its most important programmes.

3.2. Legal Background and Historical Development

The basis for the diversified vocational programme of the National Institute for Educational Cooperation lies in its peculiar legal status. INCE is an autonomous agency of the

Venezuelan government. It constitutes a juridical person and has its own independent patrimony. Within the formal structure of government, INCE is attached to the Ministry of Education. It was created by law on 22 August 1959 in response to the accelerated economic expansion foreseen for the 1960s and its corresponding manpower requirements in the areas of agriculture, industry, commerce and the services. Since that time this institution has been directing official policy in the non-formal educational field in Venezuela. INCE's bylaws and regulations were established by Executive Decree on 11 March 1960. The first step was initiated by an ILO mission, which evaluated operational objectives and initial plans, programmes and action mechanisms. Ten years later, on 19 December 1969, INCE's status was modified: it was to extend its training services from courses for workers engaged by companies to special programmes devoted to unemployed youth. INCE's first course was devoted to the training of instructors for rural electricians. It was followed by an upgrading course for retail salesmen. Soon afterwards a course on supervision in industry was implemented which paved the way for other courses within industries themselves. Nowadays, INCE closely collaborates with CINTERFOR (the Latin American Centre for Research and Documentation on Vocational Training, an ILO agency). It has elaborated some 180 craft training programmes and special courses for instructors, supervisors and top managerial personnel. INCE has also designed programmes for basic skills in some 170 occupations that can be filled by semi-skilled labour stemming from lower unemployed strata of the urban population. At the present time INCE is also engaged in "indirect", i.e. delegated action, through *ad hoc* suborganizations combining the efforts of the government and private enterprise at training and developing personnel in specialized vocational institutes. Training is also provided through specific agreements with private associations representing a particular sector of the economy.

At the headquarters in Caracas the Institute is structured around management units which pertain to the various functions of administration and control. Following the guidelines of Executive Decree No. 478 of 8 January 1980, the Institute is presently engaged in the process of regionalization through administrative decentralization. Operationally, INCE thus has its own managerial and production structures in every state of the nation.

The cost of INCE's activities is met by the financial contributions of both employers and state. The law stipulates a compulsory contribution from employers equivalent to 2 per cent of the total annual amount of salaries and monetary fringe benefits paid to all of the personnel employed in establishments independent of federal, state or municipal government plus one-half of one per cent of all bonuses accrued by all employees at the end of each year. The contribution of the state amounts to a minimum of 20 per cent of the sum total represented by the other two sources. The Institute's budget may also benefit from donations and legacies, as well as from fines paid by the establishments violating the legal dispositions that bind them to INCE's manpower training activities. As a result, the Institute is 80 per cent self-financed.

INCE's relationship with workers' organizations, enterprises and other agencies is exemplified by the composition of its governing bodies. Its top authority is its National Administrative Board. It is formed of INCE's President, Vice President, and Secretary General, three representatives of government (Ministries of Education, Development Promotion, and Labour), three representatives of the employers' associations (Chambers of Commerce and Industry, and FEDEAGRO -- the Farm Owners' Federation), and four representatives of labour (Agricultural Workers' Federation, Confederation of Venezuelan Workers, National Association of Employees, and the Venezuelan Teachers' Federation). The actual direction and administration of the Institute is carried out by an Executive Committee consisting of INCE's President, Vice-President and Secretary General, and two other members nominated by the Board to represent labour and employers.

The level of accreditation of INCE's programmes is another crucial subject. According to Executive Decree No. 604 (8 May 1980) and Resolution No. 146 of the Ministry of Education (same date) young workers who are incorporated into the National Apprentice Training Programme can now obtain accreditation equivalent to either the three-year lower secondary school cycle, or the full five-year secondary school education diploma, depending on the formal educational level held by participants at the time of entry and on the general education subjects they may have studied. At the same time the Resolution of INCE's National Administrative Board (January, 1981) extends the legal obligation of companies to take on apprentices to all areas of the country.

This obligation was increased from 2 to 4 per cent and, from January 1982, to 5 per cent of the labour force employed by the companies. Finally, through agreements between INCE and the Ministry of Education, students in the last year of the basic education cycle can obtain semi-skilled training as an exploratory activity and students in the 8th and 9th grade of the lower secondary education cycle can be involved in INCE's Basic Training courses (a part of the National Apprentice Programme) so that they can become apprentices and simultaneously obtain their secondary diploma.

There are, of course, also restraints. INCE's bylaws and regulations restrict the Institute's activities mainly to vocational training of workers already employed by companies in the various sectors and branches of the economy. On the other hand, the restriction is offset by the fact that the law also stipulates that INCE should carry out training programmes among unemployed young people. INCE also has obligations stemming from Executive Decree No. 332 (August, 1974), whereby training should be provided to the inhabitants of socially and economically marginal urban areas. However, in this case semi-skilled training is restricted to individuals older than 18. The regulations also indicate that literacy and primary programmes may be carried out by INCE, but only insofar as they apply to workers already employed by contributing companies who need these initial steps in order to be eligible for further training (e.g. through the National Apprentice Programme). Other restraints apply to methods of operation and will be specified later on in the section describing INCE's programmes.

3.3. Flexibility of Response to Vocational Needs

The Venezuelan process of economic expansion dates back to the 1960s. It was greatly accelerated in the 1970s after the nationalization of the oil industry and the sharp increase in the international price of petroleum. Quite abruptly the country went from a stage of almost total dependency on imports of manufactured goods to a phase of import substitution. The latter stage required the build-up of a basic infrastructure, the formation of a policy stimulating the transfer and adaptation of technologies and, last but not least, the acquisition of knowledge and skills needed by a modern economy. The education and training system had to be adapted to the manifold manpower training needs generated by the national development process. As part of this adaptation INCE was created and its programmes and methodology were given the necessary flexibility.

Firstly, INCE is today in permanent consultation with business executives and technicians, in order constantly to adapt its programmes to real training requirements and to improve curricular contents on the basis of occupational analysis. *Secondly*, in line with the permanent process of change in the production of goods and services, the Institute has adopted the policy of providing training, not merely for a variety of jobs but for vocational careers, through modular programmes. *Thirdly*, in addition to the activities conducted on the basis of its own resources INCE also stimulates vocational training through the "indirect" action programmes already mentioned. These programmes operate under INCE's supervision and are partially financed by it. The aim of this sectoral training is to provide specialized personnel for the various sectors of the economy. So far, training has been organized for insurance, oil and petro-chemicals, tourism, prison supervision, banking, public health, textiles, agriculture, and construction.

Flexibility is also shown in INCE's own operational methodology. To perform its direct training activities, the Institute is involved in a variety of activities:

- INCE determines by means of surveys and in accordance with the current development plan of the nation, the manpower demands and the need for specific training activities.

- INCE prepares, after detailed analysis concerning the tasks involved in performing a given occupation, the teaching and learning materials to be used as part of elaborate curricula which guide each participant in performing specified tasks according to a scale of growing complexity.

- INCE promotes and organizes, in coordination with employees, technical training within the enterprises, both at basic and advanced levels. These programmes include training for instructors, supervisors and top executives.

- INCE promotes and organizes semi-skilled training courses for residents in marginal urban settlements.

- INCE establishes permanent centres or provides mobile units and workshop vans for training in skills needed in the more remote areas of the country.

- INCE encourages inservice professional training by allowing the establishments to deduct, within certain limits, the costs of these courses from their budgetary contribution to INCE.

3.4. Priorities for Training Programmes

As in most other countries, the worldwide economic crisis has exerted some pressure on the Venezuelan economy. To counteract the unfavourable repercussions of this situation, the 6th National Development Plan, which took effect in 1981, incorporated various kinds of economic stimuli. Together with other social measures, the Plan projected the training needs required to further the country's development, taking into consideration:

- unemployment and underemployment rates;
- the continuing scarcity of skilled and semi-skilled manpower;
- rapid population growth and rural to urban migration, which add up to an increase of over 6 per cent per year among marginal urban settlements; and
- the emphatically young age pyramid structure of the country as a whole.

In particular, the Plan regarded the five-year vocational training programmes as closely related to an economic policy oriented towards greater and better employment opportunities and towards increased productivity.

The elaboration of INCE's target contribution to human resource development within the 6th Plan has been based on social, demographic and economic indicators, on government economic policy specifying sectoral development priorities, on present and future manpower requirements at the various levels and in the different sectors and branches of the economy, and on INCE's own present and future capacity to absorb greatly increased target figures for participants.

The result of this development process is demonstrated by the list of INCE's training programmes indicated in Table 1. The clientele characteristics of each programme are described in the next chapter.

3.5. Coverage and Accessibility of Training Programmes

INCE's activities cover all levels of vocational training and are available all over Venezuela. In particular the different economic sectors are taken into account in terms of the priorities already mentioned. Altogether the following programmes are offered:

- industrial and construction crafts training and development,
- commerce and services training development,
- literacy and primary education for workers in companies,
- inservice instructor training and development,
- supervisory and managerial training and development (including industrial relations),
- INCE's instructor and coordinator training and development,
- semi-skilled labour training,
- continuing education (mail, radio and T.V.),
- mobile programmes for training in industry and commerce.

These programmes cover a variety of levels of vocational training, from basic training to upgrading and specialization. Altogether the levels are as follows:

- *Basic Training* for the 18 plus age-group. The participants attend courses in an INCE centre. They are given theoretical and practical training in all the tasks involved in their chosen craft. (They are not apprentices).

- *Basic Training for Apprentices (BTA)* for apprentices in the 17 plus age-group. This level is designed to enable the participants to work in a qualified occupation. At INCE's training centres they acquire adequate knowledge of the theoretical and practical elements of a given craft. This process is followed by inservice practical

Table 1: Distribution of Participants among INCE's Programmes
(in % of Total Number of Participants)

PROGRAMMES	Participants 1981	1982	1983	1984	1985	Total for Period
DIRECT ACTION						
Industry and Construction	10.0	9.4	9.3	9.1	9.3	9.4
Commerce and Services	11.0	10.1	10.0	9.8	10.1	10.1
Semi-Skilled Training	17.0	18.7	20.0	21.5	22.6	20.3
Literacy and Primary Education	6.0	5.3	4.9	4.4	4.0	4.8
Inserv. Training*	12.0	13.3	14.3	15.3	16.1	14.4
INCE's Instructors and Coordinators	.6	.7	.7	.7	.8	.7
Contin. Education	8.0	9.1	9.8	10.5	11.0	9.9
Subtotal	64.6	66.6	69.0	71.3	73.9	69.6
INDIRECT ACTION						
Sectoral Inst.	16.4	15.3	13.9	12.6	11.2	13.6
Spec. Training Agreements	16.0	14.7	13.4	12.1	10.7	13.0
Companies' Own Programmes	3.0	3.4	3.7	4.0	4.2	3.8
Subtotal	35.4	33.4	31.0	28.7	26.1	30.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

(*) Includes both instructor and supervisory training and development.

Source: INCE data

training. Once BTA is completed most apprentices remain in their company as regular workers.

- *Accelerated Training* is offered to workers who receive intensive training to enable them rapidly to acquire the skills needed to obtain access to a given occupation.

- *Supplementary Training* for workers who already have a fair degree of knowledge and competence in a given craft, so that they may widen and improve the techniques of their particular specialities and thus achieve a higher qualification.

- *Upgrading* is intended for already experienced workers who want to acquire greater efficiency in their particular craft. At this level their knowledge and manual skills are evaluated and further training is provided in those areas in which they have been found to be less efficient.

- *Specialization* is offered for experienced workers who want to become highly skilled through the acquisition of in-depth knowledge and of additional, selected skills of a sophisticated kind.

3.6. Description of the Training Programmes

To facilitate a detailed understanding of INCE's vocational development programmes a chart of their objectives, areas of instruction and entry requirements together with levels of vocational development specified above is presented in Table 2. This overview is restricted to the direct action programmes.

4. INCE'S APPRENTICE TRAINING PROGRAMME: THE CORE OF NATIONAL EMPLOYABILITY TRAINING

4.1. General Description and Basic Aim

The National Apprentice Training Programme (NATP) is the core of all of INCE's activities. According to Article 13 of the law governing the Institute's operations, the NATP is destined for young workers in the age range of more than 14 and less than 18 years, who are thus legally entitled to systematic training and development in the occupation of their choice. Article 14 of the same law devolves on INCE the responsibility for organizing and supervising such training. For workers becoming apprentices the employer-worker relationship is specially regulated by virtue of Article 204 of the Labour Law. As a result, young people entering the active labour force in Venezuela receive, besides their basic salary, the benefit of vocational training through INCE. This training is provided in separate courses at the worksite or as an inservice activity supervised by the Institute. Through NATP young workers obtain the key to further educational opportunities. If they have participated in NATP's basic training and inservice practice they can advance by enrolling in updating and specialization courses, which are again provided or promoted by INCE.

Every specific apprentice training programme is structured around

- a theoretical phase, and
- a practical phase.

Both are designed so as to give apprentices the theoretical knowledge and skills that are essential for efficient job performance. INCE has undertaken the implementation of teaching-learning activities for apprentices in its own training centres. This includes both theoretical knowledge and practical skills.

Table 2: Characteristics of INCE's Major Vocational Training Programmes through Direct Action

PROGRAMMES SPECIFICATIONS	INSERVICE INSTRUCTOR TRAINING	SUPERVISORY AND MANAGERIAL	SEMI-SKILLED TRAINING
OBJECTIVES	To promote and develop further training of workers across the nation, through special methods and accelerated courses, by using company's own recources.	To provide practical knowledge to help the supervisor to carry out his job more efficiently. To provide managers with the knowledge conducive to a more efficient performance of their job. To provide training for heads of instructor teams and for indust. relations personnel.	To train semi-skilled manpower at the low-income grass-roots level of the population.
CONTENT AREAS	- According to each company's needs	- Supervision - Decision-making - Teaching and learning methodology - Supervison	- Industry and artisan-type crafts - Commerce - Services

Source: INCE, Internal Paper

CONTINUING EDUCATION	INDUSTRY AND CONSTRUCTION	COMMERCE AND SERVICES	LITERACY AND PRIMARY EDUCATION
To impart training through mail, radio or T.V. in geographic areas whose characteristics hinder advancement, or for persons who must study in their own time. To improve basic general knowledge and complement theory for job or craft.	To promote and develop nationwide training of workers in crafts, woodwork, industrial and construction sectors.	To promote and and develop nationwide training of workers engaged in the commerce and service sectors.	To provide company workers needing basic schooling with basic knowledge in reading and writing, and general knowledge as imparted by primary school.
- Cultural - Industry - Commerce and Services - Supervision - General Management	- Mechanics - Electricity and Electronics - Clothing - Motor Mechanics - Carpentry - Construction - Graphic Arts	- Administration - Clerical - Distribution - Services	

Table 2: Characteristics of INCE's Major Vocational Training Programmes through Direct Action, continued

PROGRAMMES SPECIFICATIONS	INSERVICE INSTRUCTOR TRAINING	SUPERVISORY AND MANAGERIAL	SEMI-SKILLED TRAINING
LEVELS	- Supplementary - Upgrading	- Upgrading	No specific level is contemplated. Courses are very short. (30 to 300 hrs)
ENTRY REQUIREMENTS	At both levels: Have completed primary school. Be qualified worker. Possess ability to communicate knowledge and to supervise workers. Have a good mastery of the craft.	Supervisory: Be a supervisor or be on the promotion list. Managerial: Be at top managerial level within company. Instructors: Be a qualified instructor within company or be on the promotion list.	Be 18 years of age or more. Know how to read and write. Be unemployed or have very low income.

CONTINUING EDUCATION	INDUSTRY AND CONSTRUCTION	COMMERCE AND SERVICES	LITERACY AND PRIMARY EDUCATION
- Basic General level - Basic Training - Complementary Training - Upgrading	- Basic Training (Apprentice) - Accelerated Training - Supplementary Training - Upgrading	SAME AS INDUSTRY AND CONSTRUCTION	- Basic literacy and First Grade of Prim. School - Primary Educ.: . 1st level (2nd grade) . 2nd lev. (3rd & 4th grades) . 3rd level (5th grade) . 4th level (6th grade)
Basic General: 4th grade primary school for first course taken in sequence. Basic Training: Completion of 6th grade primary or secondary school accordg. to craft. Complementary Training: 4th or 6th grade primary and/or work in craft, or secondary school completed, according to craft. For managers have a compl. post. Upgrading: Same as for complementary.	BTA: 14 to 17 years of age. 6th grade of primary school. Successfully completed of INCE's ability and psychological test. Accelerated and supplementary training: 18 yrs. of age and over. Successfully completed of INCE's ability and psychological tests. Upgrading: 18 yrs. of age and over. Certification of being employed in a craft.	SAME AS INDUSTRY AND CONSTRUCTION	Basic Literacy: Be an illiterate or at first stages of learning how to read and write. Be a worker of a contributing company. Primary Education: Successfully completed literacy courses. Have basic knowledge required to enter the given grade of prim. school. Be a worker of a contributing company.

After passing through this stage, young workers can as a second stage work for the company to complete their inservice practice period and receive completion certificates from the Institute. The total duration of both stages varies depending on the chosen speciality - between two and three years. It is recommended that during inservice practice the companies should rotate apprentices so that they may gain experience in the different tasks and operations of the whole craft. This can be accomplished according to a scheme of growing complexity in order to facilitate comprehension and mastery of all the operations constituting a craft. As this inservice practice routine varies greatly with each company and production it will not be described here.

4.2. Selection of Training Fields and Objectives of the Programme

Regarding the difficult task of defining occupational fields for apprentice training programmes, INCE is required by law to be responsive to the manpower needs of the participating companies and to carry out manpower research. The basic outline of apprentice programmes is also laid down in detailed regulations. Altogether the selection and basic programme development procedure is guided as follows:

- Articles 43 and 44 of the law monitoring INCE's activities stipulate that fields shall be selected according to the manpower needs of enterprises, and that the Institute shall determine specific training areas by means of adequate manpower research. Closely related to this is the establishment of priorities as described in section 3.4.

- Fields which have been selected for training must be narrowed down to specific crafts as defined by the National Occupational Dictionary, prepared in collaboration with the International Labour Office.

- The craft must be "universal" i.e. not specific to only one sector of an industry or trade.

- Any occupation to be included in NATP must be approved by INCE's Administrative Board after thorough occupational analysis, curricular content description, and evaluation procedures.

- Should a company wish to undertake apprentice training in a field other than those specified, it may do so provided that it falls within the categories approved by the Board and published periodically by the Institute. The study plan must also be approved by the Board. INCE collaborates in the preparation of such a plan.

- A prerequisite for implementation is that total training must not take less than one year or more than four years. Furthermore there must be a 1 to 3 relationship between theory and practice.

The fields of training as selected by INCE are listed in Table 3, together with the objectives and the entry requirements which are generic for all fields. Again, it has to be noted that these programmes are designed for young people who already form part of the active labour force.

5. EMPLOYABILITY TRAINING FOR APPRENTICES IN ELECTRICAL MAINTENANCE: A CASE STUDY

5.1. The Pressing Need for Apprenticed Maintenance Electricians

Although Venezuela is one of the world's major oil producing countries a large proportion of its overall development has been based on energy other than petroleum, especially hydroelectric power. Six major electricity companies in the country are operated by the public sector and seven others are privately owned. The evolution of Venezuela's nominal installed capacity is shown by the fact that the totals rose from 4,016 MW in 1975 to 7,613 MW already in 1979. Of the latter figure 35 per cent was produced by hydroelectric power, amounting to 48 per cent of all energy actually produced in the country in the same year.

Craft specialities in the field of electricity are, therefore, of vital importance to Venezuela. Maintenance in particular is a major area of concern. It is also one that generates considerable employment. For these reasons Electrical Maintenance - one of the four crafts chosen by the INCE-CINTERFOR training evaluation project in Venezuela - has been selected as a case study to exemplify the curricular content and methodology of the National Apprentice Training Programme under discussion.

5.2. Outline of the Curriculum

Among the crafts which national manpower surveys showed to be required by the different companies, electrical maintenance has consistently appeared as an area of priority. When this need first became apparent, INCE selected a sample of businesses connected with electrical maintenance and conducted an occupational analysis. It was carried out by INCE's experts and validated by the technicians from the companies in the sample. In the analysis the tasks and operations involved were detailed, the types of technology were specified and all items of machinery, tools, materials, installations, and facilities required for work in this craft were listed. On the basis of these elements the curricular content of the electrical maintenance programme was worked out. Again, all consideration started from the objectives of the National Apprentice Training Programme.

In order to structure the programme an analytical chart was designed. This made possible the planning of the programme according to tasks (which were grouped into modules) and their corresponding operations.

For the latter specific durations were set as well as specific technological and theoretical contents, together with the appropriate security norms and other aspects. All of this will be shown below in an example of a given task and its breakdown into its different elements.

A parallel activity was the elaboration of guides for the instructors and manuals for the participants. In addition lists of the basic equipment needed were drawn up.

Once the whole procedure was completed, the bulk of the materials was presented to INCE's National Administrative Board. Only after approval through this board could the programme become effective.

From time to time the whole procedure is revised. In the case of electrical maintenance - as part of the more general field of electricity and electronics - a special series of meetings was conducted in 1980, in which INCE staff technicians from the field debated the curricular content. As a result, certain changes were recommended and steps have already been taken to incorporate new elements and methodologies.

As presently designed, the programme is based on the following description of the craft: Workers denominated "maintenance electricians" should be capable of maintaining, at top capacity, lighting and other power installations as well as other control and protection equipment. They should be able to perform periodical checking of electrical machines, other equipment and installations so as to test them for possible malfunctioning and to adjust, repair or replace the damaged parts.

Table 3: Overview of National Apprentice Training Programmes*

OBJECTIVES (Generic for all Fields)	FIELDS OF TRAINING	
	Industry	Commerce
- To train workers for qualification in occupations which are of a universal nature and have been approved by INCE's National Administrative Board, and which furthermore respond to priority requirements in the industrial and commercial sectors of the economy. - To train minors who are apprentices, and who are part of the active labour force.	- Graphic Arts - Construct. in general - Automotive Mechanics - Electric. & Electron. - Carpentry - Ship (coastal and Boat Carpentry - Rural Carpentry - Artisan-type Crafts - Shoemaking - Clothesmaking - Technical Drawing (Mechanics) - Furniture (carpentry and finishing) - Electrical Maintenance - Metallurgy & Welding - Industr. Measurement & Control Instruments - Auto Bodyw. & Painting - Gen. Mainten. Mechan. - Heavy Machin. Mechan. - Diesel Mechanics - Mechanics-Electrical Appliances - Electron.-Radio & T.V. - General Refrigeration - Plastics - Upholstery - Petroleum & Petrochem. - Machine & Tool Operation	- Distribution - Administration - Clerical - Services - Banking - Insurance - Savings and Loan - Financing Institutions

(*) Covered by INCE through both direct and indirect (or delegated) action.

Source: INCE, Internal Paper

LEVELS	ENTRY REQUIREMENTS (Generic for all Fields)
BASIC TRAINING FOR APPRENTICES	- Participants must be older than 14 and younger than 16 years of age. - Educational level desired: 6th grade primary school (Basic Education). This is not an absolute restriction. - Passing of INCE's selection tests (general knowledge and psychotechnical).

The necessary skills and knowledge of technology implied by the craft description are supplemented by instruction in general education. On the whole the subject matter to be taught is differentiated into three areas:

General education:
- Physics, mathematics, geometry, trigonometry, general electricity,
- general culture: history and geography of Venezuela, Spanish language, civics.

Related technologies:
- Components and uses of tools, equipment, measuring instruments and materials in electrical installations,
- transformers, single-phase and three-phase motors, and D.C. motors,
- motor starters and protection and control devices,
- chemical and dynamic batteries,
- industrial safety and applied drawing,
- electronic devices.

Practical skills:
- Workbench jobs: filing, drilling, metal plate bending, threading,
- tool and equipment handling as applied to electrical materials incl. cables and metal tubes,
- incandescent and fluorescent lighting installations,
- surface installations,
- use of measuring instruments: voltmeters, amperemeters, multimeters,
- testing devices,
- diagnosis, detection and repair of defects in motors, transformers and batteries,
- diagnosis, detection and repair of electrical installation defects,
- basic electronic assemblies,
- installation of different types of control for motors,
- diagnosis, detection of defects, repair and maintenance of motors.

The total duration of training is 1,760 hours, of which 880 hours are spent on "general knowledge" and "related technologies" and the other 880 hours are spent on "practical skill" training in the workshop. Hence, four hours daily are devoted to training in the workshop and two hours each are allocated to technological instruction and cultural extension.

Lessons are scheduled from 8 to 12 in the morning and from 1 to 5 in the afternoon.

An extensive range of brochures, textbooks and audio-visual materials supports the instructional process. Related technologies for maintenance electricians are for example explained in 24 brochures with the following titles: *Mechanics - Tasks; Electricity - Tasks; Topics in the Technology of Mechanics; Electricity - Operations; Electricity - Technology, Basic Electricity; Industrial Drafting; Electrical Lighting; Maintenance and Repair of Motors; Transformers and Batteries; Controls for Electrical Motors; Basic Industrial Electronics; Principles of Electricity; Electromagnetism; Measuring Instruments; Applied Drafting; Single-Phase Motors; Three-Phase Motors; DC Motors; The Generator; The Transformer; Batteries; Elements of Technology in Mechanics; Starters; Control Devices.*

Another eight specialized topics are covered by films. They are: *Ohm's Law; Ohm's Applications; Magnetism and Electromagnetism; Ferromagnetism; Phase Shift in an Inductor; Capacitor and Phase Shift in a Capacitor; Three-Phase Currents; Rotating Fields.*

The equipment needed for the course is specified in a "Basic Equipment List".

5.3. Curriculum Modules and Their Task Content

For systematic training in the employability programme of NATP, the overall curriculum is broken down into training modules. Each module is composed of a number of specified tasks and the tasks are in turn broken down into operations. Finally, each operation consists of a number of work steps.

The curriculum for electrical maintenance here is divided into five modules. A sequential list of these modules with every single task involved is presented below.

Module 1 - Workshop Bench Mechanics and Basic Electricity:

- Performing metalwork exercises on a "U" profile,
- producing a wheel puller block,
- producing a wheel puller body,
- producing wheel puller legs,

- producing an electrical furnace,
- producing a wheel puller screw,
- installation of box cutlets,
- transportation of tools and heavy equipment,
- installation of electric terminal boards,
- installation of electric lines with electricity insulators,
- fixing electrical splices and terminal soldering,
- fixing electrical lines with mechanical connections,
- single switch lighting installation in electrical metal tubing,
- buzzer and bell combined installation,
- using a bell tester,
- utilization of electrical testing devices.

Module 2 - Lighting:

- Electrical installations with insulators,
- use of diestock threading machine,
- use of conduit bender,
- installation of surface lighting with MT conduit,
- electrical installation with rigid metal conduit,
- surface installation with TPNM cable,
- installation of bench-circuit panel board,
- detection and repair of defects in a circuit,
- mercury lamp installation,
- earthing an electrical installation,
- detection of defects in a three-phase installation,
- installation of four-way circuit lighting.

Module 3 - Repair of Motors, Transformers and Batteries:

- Dismantling and assembling AC and DC motors,
- maintenance of electrical motors,
- replacement of bearings,
- repairing armature windings,
- rectification of collectors,
- repairing a universal motor,
- winding an insulator case,
- testing transformer coils,
- detection and repairing of defects in a split-phase motor,
- detection and repairing of defects in a three-phase motor,

- maintenance of batteries,
- detection and repairing of defects in a DC motor.

Module 4 - Electrical Motor Controls:

- Installation of a manual starter for a three-phase motor,
- installation of a magnetic starter in a three-phase motor,
- detection and repair of defects in a magnetic starter,
- installation of a three-phase manual reverser,
- installation of a magnetic three-phase reverser,
- detection and repair of defects in a three-phase reverser,
- installation of a single-phase motor with low voltage control,
- detection and repair of defects in a single-phase motor,
- installation of a delta-star manual starter,
- installation of a delta-star magnetic starter,
- detection and repair of defects in a delta-star automatic starter,
- installation of an hydropneumatic system,
- detection and repair of defects in a hydro-pneumatic system,
- installation of a manual starter for wound-rotor motors,
- installation of a manual starter for DC motors,
- detection and repair of defects in a manual starter,
- installation of a compensator with a manual starter.

Module 5 - Basic Industrial Electronics:

- Assembly of components,
- installation of full wave power supply,
- preparation of printed circuit for power supply,
- stabilized power supply,
- installation of transistor on common base connection.

The above presentation of modules and tasks contains only the first two levels of curriculum development. As mentioned earlier, each task can be broken down into several operations (and these into steps). According to the preceding list, the craft under discussion has 73 distinct tasks. It is obvious that we cannot list all of the operations in all 73 tasks. Therefore only one is given here to demonstrate the methodology. The task chosen for this purpose is Mercury Lamp Installation. As will be seen, it is analyzed by breaking it down into four operations and four topics of related technology.

Objective: To install a mercury lamp and test the functioning of its component elements.

Major operations (12 learning hours):

- Wire and cable slicing.(*)
- Utilization of measuring and testing instruments (test live circuits (*); test continuity (*); test earthing (*); test capacitor (**).
- Connect stabilizers. (**)

Note: (*) = repeated operation;
(**) = new operation.

Technology (6 learning hours):

- Mercury lamp - parts.
- Functioning of a mercury lamp circuit.
- Data on lamps and on stabilizers.
- Mixed light bulb.

5.4. Learning Environments

INCE operates its programmes with a compound system of different learning environments. Aside from the actual work setting of the employing company a number of other learning facilities can be utilized for skill training and theoretical instruction. In the case of maintenance electricity INCE's programme specifies the following learning environments for (a) instruction in general education and related technologies and (b) the acquisition of skills:

Learning environments for (a):
- A classroom fully equipped for instruction in general education subjects,
- a laboratory for instruction in physics,
- a special classroom for individualized study of applied technologies; this classroom is equipped with the ma-

chinery, tools and materials needed for the internalization of technologies.

Learning environments for (b):
- A workshop for basic mechanics and electricity, equipped with 15 work benches, shears for cutting sheetmetal and vertical drills; this area can also be used for repairing motors and transformers,
- a section of a workshop with modular cabins.

The workshop as a learning environment is given special attention since the programme is performance-based and the acquisition of skills through work situations is considered to be its central objective. Therefore, didactic methods of workshop training have been developed to assist the instructor in employing efficient teaching techniques. Examples of such guidelines for the instructor are as follows:

- Indicate to trainees, by using an analysis sheet, how tasks are broken down into a sequence of operations.
- Make sure that concepts learned by trainees can be readily translated into practical applications.
- Ensure that workshop practice resembles real work conditions as closely as possible. Differences between the simulation of work conditions and real work situations should be explained to the trainees.
- Use special evaluation sheets for recording information on trainee performance throughout the learning process.
- Ensure that trainees internalize values and attitudes conducive to punctuality, responsibility, comradeship, teamwork, etc.
- Ensure workshop cleanliness and orderliness.
- Ensure that safety principles are constantly applied during workshop practice.

5.5. Evaluation of Trainee Performance

Evaluation is started by the trainee himself while he performs his work. He must fill in the categories of the evaluation sheet as the final aspect of his job analysis noting down the specifications and other aspects he has to consider. He will then give the sheet to the instructor, together with the corresponding task analysis sheet. The instructor checks the specifications, measurements, readings, etc., and discusses with the trainee any errors found or any differences of opinion on the categories of the evaluation.

The final evaluation is the responsibility of the instructor. He has to consider the work actually performed (and corresponding qualifications) and professional ethics (behaviour, cleanliness, etc.). The evaluation sheet is then signed by both the trainee and the instructor. As a record, it must be kept in the trainee's dossier.

At the end of every month the instructor submits a brief report on each trainee to the workshop coordinator. The latter studies it for control purposes. It is recommended that the superintendent of the training centre should maintain a permanent file on each trainee. Finally, the results of all individual sheets are shown in a collective evaluation sheet.

The overall evaluation is composed of the areas of practice, professional behaviour and timing. Guidelines define the organization of evaluation in these areas. For the example of electrical maintenance these guidelines are as follows:

Practice:

- The optimal functioning of an electric installation is a non-variable norm as applied to assemblages and component parts, to power feeding, and to the mechanics of adjustments and connections.

- The specifications given (including tolerance limits) should be strictly adhered to by the trainee.

- The use of measuring and control instruments and devices should result in accurate readings and interpretations, and in proper functioning of motors and installations.

- Tools, equipment and materials should be used with a view to correct handling, specificity and economy in their use.

- Specific knowledge and skills should result in acceptable performance of the operations and steps involved in the task under consideration.

The qualification scale is: VG (very good) = 18 points; G (good) = 14 points; F (fair) = 10 points; and D (deficient) = 6 points.

Professional Behaviour:

- Task analysis. The instructor has to see to it that the trainee develops his work plan and puts it into practice conscientiously. This implies adherence to work plan (discipline); neatness of analysis presented, of operations performed and of pieces finished; carefulness and efficiency in the planning and organization of activities to be performed and in the process of practical work itself.
- Orderliness. This includes the care shown in the handling of tools and other equipment: arrangement of tools and conditions in which they are kept; maintenance of tools; correct use of tools.
- Cleanliness. Basically this refers to cleanliness of the work-site.
- Cooperation. This refers mainly to aspects such as overall workshop cleanliness, economic use of materials, comradeship, social activities, respectfulness towards other trainees and training centre personnel, care in use of installations, general responsibility, etc.
- Punctuality as to working hours.
- Development of task. Here trainees are evaluated as to independent work and valuation and assimilation of constructive suggestions.

The qualification scale is: VG = 3 points; G = 2 points; F = 1 point; and D = zero points.

Timing (as a special feature):

During practical work, every trainee must note down on his individual evaluation sheet the time spent on each specified phase of his work (including overtime, short-time or absence). On completion of the task assigned the instructor will total the separate times spent as well as compare them in relation to the different operations involved. Time is subject to evaluation because excessive time spent on adequate completion of a given sequence of operations would indicate that one or more operations, or even steps, had to be repeated until they were considered satisfactory by the instructor. There is no qualification scale for this item.

5.6. Evaluation of Course Effectiveness

The effectiveness of the electrical maintenance course was evaluated together with three other specialities (maintenance mechanics, automotive mechanics, and book-keeping) as part of a major effort to obtain a clear picture of the structure and operating conditions of the National Apprentice Training Programme. By introducing this evaluation INCE has fulfilled the research recommendations made by CINTERFOR.

The evaluation was exploratory because the general problems involved had not been studied by INCE before and consequently the efficacy of the programme as a whole and of the course under consideration in particular was largely unknown - a fact that inhibited decision-making for the programme and improvement of the curricular content. Indirect sources of the evaluation included legislation and occupational analyses. Direct access to field information was obtained through questionnaires (with both open and closed questions) and direct interviews. The study's instruments were validated by means of an opinion survey and a pilot test among companies chosen at random in the Federal District and Miranda State (Greater Caracas and conurbation nuclei to the west of the capital city).

The universe was constituted by 392 electrical maintenance trainees from the states of Aragua, Carabobo, Bolívar, Lara, and Miranda, plus the Federal District. (These federal states contain the majority of the country's enterprises and the greatest number of INCE electrical maintenance trainees). Of this universe a sample of 196 trainees (i.e. 50 per cent) were first selected. Due to labour mobility only 139 persons could be reached - this number constituted the final sample. Of these, 118 (83.1 per cent) were in full-time employment. The results reported here will mostly deal with this last group.

The study found that the trainees gave different reasons for entering the course. Of the total sample of 118 fully employed trainees, 38 per cent declared they had first registered "because they wanted accelerated training"; 23 per cent "because they could not continue in highschool"; 22 per cent "because they wanted to learn a craft"; 10 per cent "in order to help solve economic problems"; 5 per cent "because they could not continue in a (formal) technical school"; and 2 per cent in order "to gain promotion within the company". 76 per cent of the sample said they had entered the course "on their own initiative", i.e. they wanted to become maintenance electricians, while 18 per cent had come in "under contract with a company" and 6 per cent were "sent in by their parents". 79 per cent of those interviewed had received information about the course before registration. While 50 per cent had got this information from family members or friends, 24 per cent had obtained it through the media.

Another part of the study examined demographic characteristics and socio-economic status. All trainees were male, 86 per cent of them were in the 18-23 age group and the rest over 24 years of age. 53 per cent of the sample were economically responsible for a family of 4 to 7 persons, 36 per cent for more than 8, and 11 per cent for 1 to 3 persons. 70 per cent of all trainees had at the time a salary of between US$ 465 and US$ 814 monthly. It is worth noting that 97 per cent of all participants in the survey had secondary, albeit incomplete schooling. As to their parents' level of education 5 per cent were illiterate, 37 per cent had incomplete primary education, 42 per cent had completed primary education, 7 per cent had incomplete secondary education, 6 per cent had completed secondary education, 1 per cent had not finished formal technical schooling, and 2 per cent had incomplete university studies. With respect to head of the family employment, 78 per cent were fully employed; of these, 71 per cent were drivers, merchants or wage-earning labourers. As regards family income, 52 per cent declared that it was "sufficient".

In general terms, 57 per cent of the former trainees declared that "all parts of the training programme had been useful in the pursuit of their craft." The rest favoured inservice practice, and workshop and theoretical training at INCE's centre. However, when asked about the actual application of the knowledge and skills they had acquired, 39 per cent said that real application was only half of what they had learned, while 32 per cent declared that actual application could be estimated at three fourths of the skills learned; 25 per cent felt that only one fourth could be directly applied on the job, while the rest thought the percentage was even lower.

The occupational situation of former trainees had improved significantly. 73 per cent of all former trainees had started to work "immediately" after completion of the course, 15 per cent after "1 to 3 months", and the rest were scattered over various insignificant percentages. As to working hours, 86 per cent presently worked from 41 to 50 hours per week. It is highly significant that 92 per cent of all ex-trainees are now actually engaged in electrical maintenance work. Occupational upward mobility was satisfactory, when interviewed the majority of the former trainees were already "masters", "supervisors" or "technicians".

Regarding job satisfaction, 45 per cent of all former trainees thought they "would stay at their present job"; 42 per cent declared that they "did not know"; and 13 per cent said that they "were about to quit". For those in the "do not know" category a major aspect was occupational mobility within the same company or from one firm to another. As to actual job conditions, 86 per cent said they were "satisfied".

Engagement in further training was rather low. Of all former trainees interviewed, 63 per cent had not been engaged in further studies; 28 per cent did receive further vocational training in subjects related to the craft learned at INCE (upgrading course); and only 9 per cent were engaged in studies not related to electrical maintenance. It is worth noting that, although a fairly short time had elapsed since the completion of the course, 28 per cent had already received upgrading.

Unemployed former trainees constituted 16.9 per cent of all ex-trainees interviewed (21 individuals of the total sample surveyed). The reasons given for unemployment were: the salaries offered were not appealing (38 per cent), working conditions were not satisfactory (19 per cent), and "other reasons" (33 per cent).

6. SUMMARY AND CONCLUDING COMMENTS

Within the Venezuelan context, INCE, a relatively young institution, has been assigned the task of coping with the training and development of the national labour force through non-formal education. Its emphasis on young workers parallels the country's demographic structure. The wide range of its programmes responds to the nation's growing, diversified development requirements in industry, commerce, and the services, at the semi-skilled and skilled levels of competency. This case study of electrical maintenance demonstrates that a well-structured approach is employed in the National Apprentice Training Programme as the core of INCE's training activities. The Institute's structure involves both employers and workers in vocational training policy-making - a feature that has facilitated constructive dialogue in the planning and implementation of programmes. By sponsoring specialized sectoral sister-agencies and by establishing agreements with public and private agencies and organizations, INCE has paved the way for the pooling of financial and human resources for a permanent system of skill training.

INCE's overall activities encompass almost every major component needed for continuity in vocational training: from semi-skilled work at the grassroots level to skilled work in the companies; from basic apprentice training to inservice practice; from accelerated basic training for the public at large to upgrading courses.

If one were to project the present trend towards the diversification of vocational development it would be logical to expect an intermeshing of all INCE's elements with major components of the overall educational system, so that vocational training became part of a consolidated body imparting lifelong education for everyone, giving each person, from childhood on, the opportunity to develop himself in a sequence of consecutive stages over the lifespan. However, INCE's focus is clearly defined as training on the semi-skilled and skilled levels of the labour force, although the general policy of lifelong education is endorsed and certain steps in this direction have been initiated.

One of these steps relates directly to the long term build-up of vocational development. INCE has been given by the state the responsibility for making employers, workers, researchers, academicians and the public at large, aware of the deeper meaning of training as a lifelong activity. At present INCE emphasizes that for Venezuela this recently begun process is a vital part not only of production and productivity, but also of the development of the individual personality as well as of the nation as a whole. The legislators have supported INCE in its efforts, and the Institute is engaged in an active campaign to help achieve these goals.

As exemplified by this case study the priority areas of INCE's work are related to the National Apprentice Training Programme, as a stepping stone for continuity in the development of the country's labour force. However, the evaluation figures of the electrical maintenance courses reveal an apparent lack of correspondence between the acquisition and the actual use of theoretical knowledge and practical skills learned by apprentices at INCE's centre. This calls for clarification and probably for a revision of certain programme parts. On the whole INCE is quite aware of a number of issues which have to be tackled. These are:

Firstly, there is a recognized need for updating the subject matter content of courses (e.g. electronics in electrical maintenance) to cope with technological changes. The module on electronics contained in this case study is for example a recent innovation.

Secondly, there is also a recognized need to recycle instructors in ways that may range from short spells in plants for training in selected skills, to periodical work-meetings with plant technicians and to special recycling courses or seminars at INCE's Instructor Training Centre, which has recently been inaugurated.

Thirdly, there is the question of carrying out more systematic evaluation of course outcomes - including compulsory follow-up of former trainees - as well as the question of regular appraisals of inservice practices as a feedback for the skills taught in basic training at INCE's centres. Although rotation should be the common practice in inservice training, many companies simply place trainees at only one work-site, putting them to work regularly at only one given task. This deprives the apprentices of the opportunity to continue their practice in a well-rounded manner and thus make better use of all the skills learned at INCE. What is needed in this case is a persistent awareness-building campaign which, with the support of the employers' organization, may induce the companies to stop this not uncommon practice. Evaluation and supervision for feedback purposes can be accomplished through systematic technical meetings between INCE's specialized personnel and executives and technicians from the plants. At such meetings the occupational analyses and corresponding charts can be discussed and revised as has already happened in the past two years, and this will in turn bring about other correlative changes of the curricular content of the courses in question. This type of activity is sponsored by INCE with the provision that changes will be made only when they are felt to be strictly indispensable for training at the basic level. Other refinements should be left to upgrading courses as an inservice activity. When updating materials or introducing entirely new ones, INCE should standardize actual denominations and usages on the basis of ILO standards and at the same time maintain in the curricula a high degree of polyvalence so as to enable the trainees to acquire the basic skills needed for whole crafts and to cope with different technological levels which still exist in countries such as Venezuela.

Fourthly, the duty of employers to accept apprentices must be enforced together with improvement in the quality of training personnel in the companies. Survey figures show that there is overall acceptance of apprenticeship training among company executives and supervisors. Despite this fact, the rather haphazard pattern of inservice practice already commented upon seems to show that there is still much to be done in the recognition and development of training within companies. A recent analysis made by INCE's President reveals that qualified training specialists are scarce or altogether nonexistent in Venezuela. It also shows that part of the problem of inservice training as discussed above is the fact that companies often tend to underpay such specialists as there are by placing them at levels no higher than operators. To help to solve this problem, INCE is presently designing a special curriculum for courses or seminars destined to complement the knowledge and methodologies that presently employed "specialists" already have. The academic fields from which candidates for training specialists' positions can at present be chosen (e.g. engineering, economics, psychology) can be put to better use for the planning and implementation of training and development programmes within companies, with the perspective: there must be an emphasis on productivity, but also on the need of workers and employees to develop their full potential as individuals and as members of the national society.

It is not by pure chance that the keynote speech delivered by INCE's President at the October 1981 meeting of the Venezuelan Association for Training and Development touched very forcefully on this vital problem. It is strongly felt that organizations such as this, closely tied to INCE's work and incorporating top echelons from private enterprise as well as distinguished personalities from the academic world, will significantly help in creating the consensus that is needed to improve the present situation in the area just discussed.

Finally, some remarks should be made on occupational certification, a topic that is perhaps a keystone for the solution of many of the problems commented upon in this study. In the industrialized world certification is based on a long tradition. In the developing nations the pattern of industrialization is not only of recent origin; it has also been haphazardly implanted either to satisfy varying foreign market needs through foreign-owned companies, or in response to urgent internal requirements in the realm of import substitution. In both cases these countries have started with a basically untrained labour force and a dependent technology. Furthermore, the sudden break with the past has meant that some traditions associated with work have been lost, while others still persist tenaciously and are often associated with much earlier, obsolete levels of technology that tend to coexist with modern procedures of production sometimes within the same workshop.

In such circumstances certification becomes a rather difficult task. One thing is certain: certification patterns of industrialized countries cannot be simply transplanted - if only because they partly respond to different social organizational and attitudinal moulds.

In Venezuela, as has already been explained, INCE has started by accrediting some of its programmes in order to bring them up to some level of equivalence with the formal system at the secondary level of education. INCE also provides certificates of course completion which are generally accepted by employers as bona fide evidence of craft competence. But the country still lacks proper legislation which would permit an Institution like INCE to certify that such and such a person is a maintenance electrician who has a given level of competence as demonstrated by undergoing certain tests that are officially recognized.

This level of awareness regarding issues of vocational training demonstrates INCE's capability in providing skill training on the national level. It organizes and develops vocational career training at the non-formal level of education in Venezuela. Representatives of the government, of employers and employees are members of its top administrative board. The Institute is an autonomous agency of the government, it is formally attached to the Ministry of Education and has its own independent patrimony, employers being by law the major source of its finances. INCE's programmes are extremely flexible and cover a wide range of semi-skilled and skilled training activities at various levels of competency throughout the country. Besides direct action, INCE sponsors sectoral sister-agencies with the full participation of private companies: they cover the specialized training needs of the economic sectors involved.

INCE's most important activity is its National Apprentice Training Programme for the 14-17 age-group. This programme is structured around a theoretical and practical phase at INCE's training centre, and around inservice practice afterwards. The crafts taught are selected both on technological and national or regional priority grounds. After completion of the basic programme trainees can later profit from upgrading courses of various kind. It is expected that NATP will continue to form the cornerstone of INCE's activities.

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THE CASE STUDY FROM THE FEDERAL REPUBLIC OF GERMANY

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. CASE STUDY PROFILE

The curricula of a single school are analysed in the German case study. This school is not part of the public system of education in the Federal Republic of Germany. However, no other school in the country has received so much publicity with its educational programme.

Emerging 25 years ago from the apprentice training centre of the Hibernia Mining Company, the school went through various stages before it arrived at its present form of a comprehensive school with curricula in which aspects of general and vocational development are closely integrated.

This educational characteristic is in line with the dual qualification which the school confers upon its students. A journeyman certificate in selected skilled crafts can be obtained on completion of grade 12 together with access to the one or two year 'Upper School' which entitles the students to sit the entrance examination for all forms of German higher education.

The developmental theory of Rudolf Steiner constitutes the philosophy upon which the development of curricula for the Hibernia School is based. This developmental theory offers a sound, sequenced approach to the integration of theoretical thinking and practical action over the lifespan and across different learning environments. The detailed description of the practical courses offered between grades 1 and 12 is notable for the harmonious concept of overall development of the individual which is linked with practical action. However, these features are only part of Steiner's philosophy of the development of man, and a discussion of the whole comprehensive philosophy is not envisaged in this study.

Table 1: Profile of the German Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula from a private comprehensive school for boys and girls integrating theoretical and practical learning
Age Group Served	6 to 18 years of age
Sponsor of the Programme	The Hibernia School is owned and controlled by a private non-profit organization; it is funded by state subsidies and the fees are paid by the parents
Intention of the Programme	Emphasis on holistic development of the individual, balancing practical and theoretical aspects
Specific Traits	Curricula based on Steiner's philosophy of human development Dual qualification (access to further education and skilled craftsman certificate) granted upon graduation

2. STAGES OF VOCATIONAL DEVELOPMENT

The curricula of the Hibernia School follow the stages of human development as defined by Steiner. Irrespective of the strong work orientation in Steiner's "Empirical Science of Man", these stages are more comprehensive in nature than the stages of vocational development described in this study; they are also less geared towards specific vocational goals. However, the detailed description of developmental processes provides an explicit documentation of the complexity involved in the gradual elaboration of an individual's vocational behaviour.

Vocational Awareness: Vocational awareness is treated in the curricula of grades one to six as an introduction to manual work processes in the field of handicrafts. Every new skill is taught step by step and the motor involvement of all capacities of the child is emphasized. Vocational awareness is created through the introduction of measurements and through making the child familiar with the act of production according to predetermined specifications. An introduction into the scope of different vocational qualifications is not attempted.

Vocational Systematization: Vocational systematization in the curriculum of the Hibernia School is again not applicable to a comprehensive view of the world of work. Instead in grades seven and eight the variety of handicrafts and other activities introduced before are merely dealt with under more restrictive work conditions. "Correct methods" are emphasized and the characteristics of work processes are elaborated through the different activities.

Vocational Experimentation: Vocational activities are continued in grades nine and ten on a mandatory basis. The handicraft dimension is now left behind and physically demanding skill areas such as blacksmith's work are introduced. The vocational lessons are now scheduled in the afternoon and the complexity of skilled work performance is emphasized. A variety of different occupational areas are offered, but clerical work is not represented.

Employability: Before entering grade eleven the students have to select one of the following areas for vocational training: metal I and II, electricity, woodwork, textiles and child-care. After basic training in grade eleven, specialized vocational training is offered in grade twelve. A journeyman-examination permitting access to advanced technical schools concludes the training, but this is mainly considered as an "exemplary specialization".

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

Due to the close environmental links and the practical work orientation of Waldorf curricula a variety of different learning environments is extensively utilized from first grade onwards.

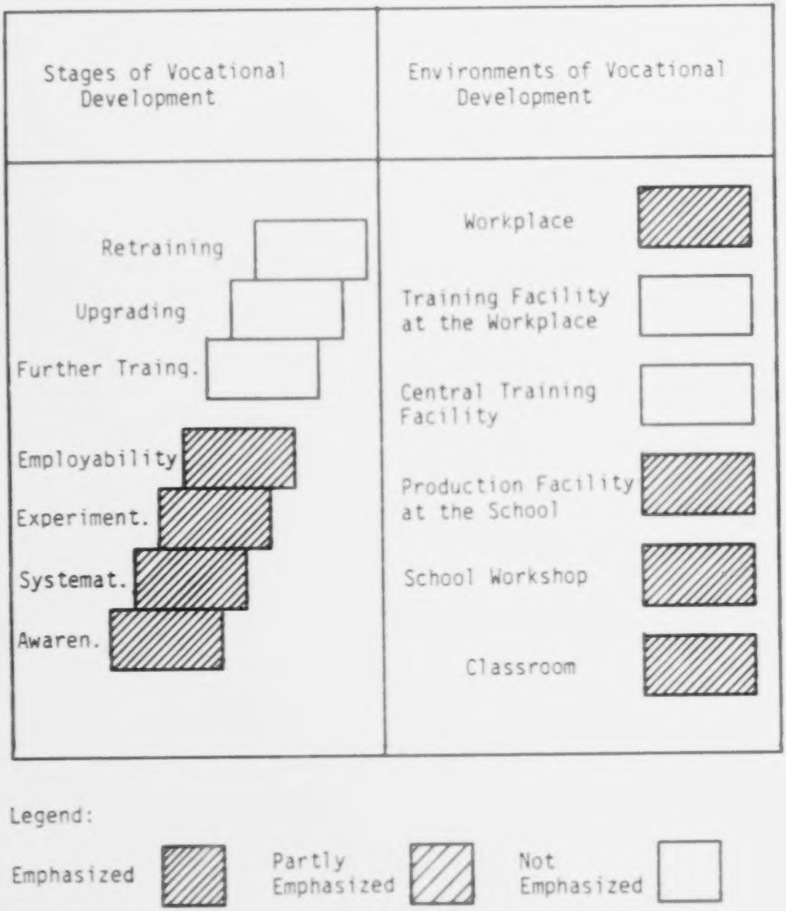
On the level of prevocational education special workshops in the school are available for subjects such as basket-weaving, woodwork and copperwork. For gardening activities on this level there is a special section on the school grounds where part of forestry is also taught.

Well equipped workshops have been built in the immediate vicinity of the classroom buildings for basic vocational training in woodwork, metalwork and electricity. An extensive tailoring shop has been set up for basic training in textile work, and social pedagogy is taught in a separate section of the classroom buildings.

All these workshops and special classrooms are designed to accommodate the whole range of skilled activities in the particular occupational area up to the journeyman level.

Out-of-school learning environments are used whenever necessary for an effective learning process. Examples of such sessions are the internships in industry and on farms and the social practice after grade ten.

All factors of the learning process are carefully considered and well founded decisions are made for the utilization of a variety of settings for the learning process. Classrooms, laboratories, school workshops and work sites in industry, in farming and the community are arranged in such a way that they can effectively foster the individual student's development process.


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment.
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the German Case Study

4. DISTINCTIVE FEATURES OF THE CASE STUDY

The Hibernia School has to be regarded as an "alternative school" in the heavily state-regulated system of formal education in the Federal Republic of Germany. The school's curricula and learning environments have been particularly enlightening for educational policy in the country, since the transition from a tripartite system of education to a comprehensive school is a much disputed issue. Against this background the Hibernia School offers exceptional comprehensiveness by incorporating vocational curricula as a fourth branch beyond integrating the three branches of the traditional school system. In the still ongoing discussion Hibernia's well-designed approach to this comprehensiveness embracing vocational development has become a model for the proponents of comprehensive schools.

The most distinctive didactic feature of the Hibernia School is the transformation of a single philosophy of the development of man into elaborate curricula. The structure of this system of philosophy-based curricula is matched by the organizational structure of the Hibernia School. Over the past two decades this approach to comprehensiveness has been backed by a vast body of educational experience. The state-designed approach to comprehensive schools on the other hand has often been accused of neglecting experience-based development and originating from an abstract concept.

Hibernia's curricula are school-based, but with the growth of the child the range of activities widens. Consequently the scope of in-school learning environments has been gradually extended to include specialized instructional areas up to the point of workshops for productive output. Additional learning environments in the school's vicinity are involved to guide the pupils in encountering the surrounding community. Vocational development is particularly enhanced by a spell of social practice in a hospital, a kindergarten or some other social institution, and by internships in industry.

Altogether the curricula of the Hibernia School represent in a unique way the focus of this study on continuous vocational development encompassing a variety of learning environments. This case study is therefore partly an illustration and partly a touchstone for the design of curricula for vocational development.

HIBERNIA SCHOOL

ANALYSIS OF AN INTEGRATED CURRICULUM EMBRACING VOCATIONAL DEVELOPMENT

by

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1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT

1.1 Geographic and Demographic Situation

This case study discusses the vocational development activities of a comprehensive primary and secondary school in a highly industrialized area of the Federal Republic of Germany (FRG). The FRG covers an area of 149,000 square kilometres in central Western Europe. It is bordered in the east by the German Democratic Republic and Czechoslovakia, in the south by Switzerland and Austria, in the west by France, Belgium and the Netherlands and in the north by Denmark.

Between low-lying agrarian land in the north and the Alp mountains in the south there are a variety of different geographical regions. The school is situated in the middle of the Ruhr industrial area in the central part of the FRG.

1.2 Socio-Economic Structure

The FRG has a total population of more than 61 million, of whom more than 15 per cent are in the age range of 65 years and above. The GNP per capita was DM 1,600.00 in 1982. Out of the 27 million inhabitants who are presently engaged in the labour force less than 5 per cent work in agriculture.

The FRG has considerable resources of coal and ore. Heavy machinery is produced in the central region and in the south. Several towns on the North Sea and the Baltic Sea have large shipbuilding facilities.

The school which is studied here is located in the most populous of the 11 states of the Federal Republic of Germany. The development of heavy industry in this region is favoured by an excellent infrastructure, including a system of waterways.

1.3 The Formal Education System

School attendance is compulsory for all children between the age of six and eighteen years. Four years of primary education are followed by five to nine years in a tripartite system of secondary education, in a comprehensive school, or latterly in a vocational school. Within the tripartite system the following programmes are offered:

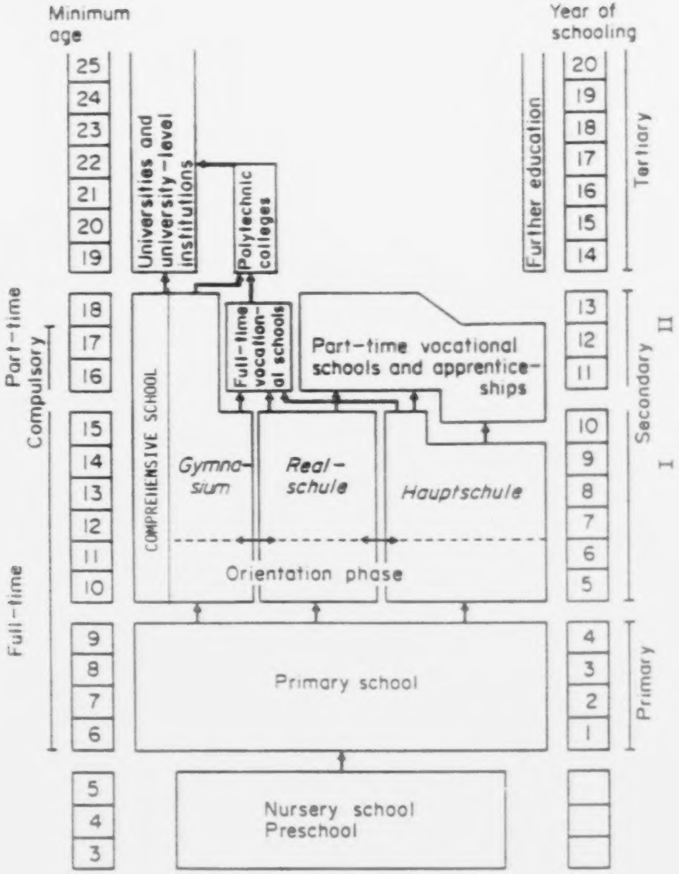
- Main School (Hauptschule): this extends from the 5th to the 9th or 10th grade, culminating in a Main School Final Certificate (Hauptschulabschluss). About 40 per cent of all 14 year olds are currently attending the almost 18,000 main schools.

- Intermediate School (Realschule): this extends from the 5th to the 10th grade and culminates in the Intermediate Secondary School leaving certificate ("Mittlere Reife") for successful leavers. About 25 per cent of all 14 year olds are attending the 2,500 intermediate schools.

- Grammar School (Gymnasium): this starts with the 5th and ends with the 13th grade. The Intermediate Secondary School leaving Certificate ("Mittlere Reife") can be obtained on successful completion of grade 10 and Matriculation Certificate (Abitur) in grade 13 in Secondary Level II (Sekundarstufe II). This latter certificate qualifies those holding it to enter a higher education establishment (university or college). About 25 per cent of all 14 years olds attend the 2,500 Gymnasien. More than 20 per cent of year group go on to Matriculation Certificate.

The comprehensive school combines all three secondary education programmes described above. Students can extend their education past the Main School Final Certificate and the Intermediate Secondary School Leaving Certificate ("Mittlere Reife") up to the Matriculation Certificate ("Abitur").

Vocational education is usually received within the "dual system". The system comprises inplant training and (part-time) vocational school. After a course lasting from two to three-and-a-half years in industrial-technical or certified journeymen or white-collar workers. At the present time some 1.7 million trainees or apprentices (roughly 64 per cent of a year group) are undergoing vocational training.


Minimum age
Year of schooling
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
Part-time
Compulsory
Full-time
Universities and university-level institutions
Polytechnic colleges
Further education
Full-time vocational schools
Part-time vocational schools and apprenticeships
COMPREHENSIVE SCHOOL
Gymnasium
Realschule
Hauptschule
Orientation phase
Primary school
Nursery school
Preschool
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Tertiary
Secondary
II
I
Primary

Source: Adapted from Husén T., Postlethwaite, T.N. (eds.) *International Encyclopedia of Education*. Oxford, UK: Pergamon, 1985, p. 2036.

Figure 1: Formal Educational System (1980), revised

An alternative means of vocational education is the full-time vocational school (Berufsfachschule): this type of school offers courses of from one to three years (as in the "dual system") by means of which young persons can obtain a trade qualification or are prepared for subsequent training within the "dual system" (which then usually means a shorter term of apprenticeship). It also offers courses and final qualifications which do not occur within the "dual system", such as in social work and nursing. There are some 340,000 pupils attending a total of almost 3,000 full-time vocational schools (Berufsfachschulen).

The Hibernia School, which is studied here, is basically a comprehensive school, but its administration and its curricula are not part of the system of public education. Also, the school exceeds the scope of public comprehensive schools in that its graduates can achieve dual qualifications as part of the school's programme. Parallel to the academic qualification obtained on passing the Matriculation Certificate ("Abitur"), training in a skilled craft can be completed and a journeyman certificate earned.

2. THE HIBERNIA SCHOOL: A COMPREHENSIVE SCHOOL COMBINING AN ACADEMIC AND A VOCATIONAL ORIENTATION

2.1 Origin and Organization of the Hibernia School

The origin and location of the Hibernia School are programmatic: it is a school for sons and daughters of the working population, a "community school" with a variety of cultural and economic ties in the immediate vicinity (the focus of Herne, Bochum, Gelsenkirchen). Economic responsibility for the school is borne by the Hibernia School Association; its assets are in the hands of the Hibernia School Foundation, a non-profit organization; and individuals who wish to support the school financially and in other ways have joined together to form the Association of Friends of the Hibernia School.

The 1981/82 school year saw an enrolment of approximately 1100 pupils, receiving instruction from approximately 80 teachers. Approximately 700 homes are represented in the school. The parental occupations can be roughly divided as follows:

- 27% manual workers (e.g. locksmiths, welders, electricians),
- 43% white-collar workers and civil servants at the intermediate level (e.g. master-craftsmen, inspectors, technicians),
- 18.5% self-employed (e.g. commercial agents, craftsmen, shop-keepers),
- 9% professional occupations (e.g. physicians, lawyers, architects, teachers),
- 2.5% other situations (orphans, students).

Parental educational levels are structured as follows:

- Approximately 50% have completed basic education,

- approximately 38% have completed intermediate secondary education,

- approximately 12% have completed academic secondary education or higher studies (college, university).

These figures reflect a social objective of the school: to bring together in its classes all social strata of the community.

The Hibernia School has its own administration. From their own ranks the teachers and master craftsmen, who enjoy equal rights in spite of the diversity of their educational backgrounds, choose colleagues to take charge of the various administrative functions (scheduling of lessons, dealing with authorities, personnel, examinations, school management and the like) for a limited period of time, in rotation. This principle of staff participation and responsibility in questions of school policy and administration was developed over a period of time and has been in operation since 1969.

Emerging from the apprentice training centre of the Hibernia Mining Company, the school went through various stages, learning by experience, before arriving at its present form as a comprehensive school with its own educational character. Such a developmental process offers an alternative to "reform from above" in the area of educational planning.

The Hibernia School is a comprehensive school, of which the particular educational character is determined by its emphasis in two areas: it is a school based on the educational theory of Rudolf Steiner (a "Waldorf school"), and it sees in practical work a means of general education.

From Waldorf theory the school derives a unified educational concept from kindergarten through higher secondary education. Its foundation is Rudolf Steiner's "Science of Man", an anthropological approach involving a differentiated psychology of learning and development, with its own methodological and didactic structures and strong encouragement of social learning.

The second point of emphasis is the consideration of practical work as a means of general education. In connection with this the Hibernia School has developed, in the course of its 25 years of experience, an educational concept which sees in the interaction between theoretical and practical learning an approach to a new learning quality, in which the combination of reflection and action, theory and practice, within one person can lead to a new quality in education.

The process of adjusting practical vocational work to educational needs, accompanied by mutually stimulating contacts with the state educational system, has enabled the Hibernia School to make important contributions to the concepts of "work study" and basic vocational training.

2.2 Guidelines for Curriculum Development

Education in the Hibernia-School reflects its particular character. Some of the fundamental concepts shaping this character will be analyzed here before the curricula are studied.

Of central importance is "The Principle of Encouragement". The school's experience has shown that this principle has three sources:

- the social concept of learning processes,
- the all-round nature of the subjects offered,
- the use of age-level as a point of reference for learning development.

The *acceptance of learning as a social process* means abstention from any kind of selection or differentiation according to achievement or social factors.

In accordance with this principle no student has to repeat a year and no homogeneous achievement groups are formed. Consequently new learning groups arise, in which the social and pedagogical functions of the teacher play a central role. Hand in hand with this goes the class-teacher principle of the Waldorf school. It requires that the same teacher leads a class through grades 1 to 8 and gives the greater part of the instruction in these years himself. This aids the formation of socially stable learning groups, in which processes of mutual assistance, encouragement and supplementation can take place. For grades 9 through 12/14 a class advisor assumes the functions of leadership and counsel; this simultaneously signifies the transition to the system of specialist teachers.

Thus from the first school year on an attempt is made to build up stable, educationally effective groups. When this succeeds, such a group acquires an all-encompassing developmental rhythm of its own which is capable of carrying cases of retardation forward and protecting those tending to advance too quickly.

Universality in subject matter is attained by integrating subjects usually taught almost solely on the basis of cognitive learning with those of a practical and artistic nature.

The most outstanding characteristic of the Hibernia School is its fundamental attitude towards practical work as a means of education for all pupils and for which there is no substitute. This perforce throws new light on the term "aptitude", in which practical, artistic and theoretical education exercise reciprocal influence.

This approach has enabled the Hibernia School to realize a greater degree of equality of opportunity, since the encouragement of ability not only encompasses theoretical subjects and intensive artistic training, but is also extended to the field of practical work as an equally challenging situation for the exercise of ability.

The empirical results of this type of fostering of ability support the new, more comprehensive concept of aptitude. The 25-year experience of the Hibernia School has not confirmed the widespread belief in one-sided theoretical or practical aptitudes. On the contrary, in many cases students showing high levels of performance in the workshops did the same in theoretical and artistic subjects. For example, a good journeyman's examination is often followed by good results in the examinations qualifying for university entrance.

It should be mentioned here that practical training can only lead to all-round advancement and a new quality of learning if it is connected with theory in a mutually stimulating manner; that is, when the level of mere additive combination, as is frequently encountered, has been overcome in favour of true integration. The significance of this in connection with didactic coordination of various learning environments will be discussed later.

Finally, the *use of age-level as a point of reference for learning development* requires constant observation of individual and group learning processes.

According to Steiner's theory, learning development evolves step by step in a process encompassing the entire period of childhood and youth. These developmental stages incorporate longer and shorter intervals of time and are marked by physical and psychological transformations in the child. The three most important stages are distinguished by the beginning of the second dentition(about age 6), the onset of adolescence(about age 13/14), and the end of the physical developmental processes (about age 21).

2.3 A Sequential Approach to the Integration of Theoretical and Practical Learning

As already said, the educational activities of the Hibernia School are based on Rudolf Steiner's Anthroposophy. In Steiner's writings before the turn of the century his idea of cognition had evolved, and from it he developed an anthropology along philosophic-anthroposophic lines. This conceives of Man essentially as a self-aware individuality who cooperates productively in the shaping of the world.

Practical education is then not only significant for the motor development of the growing child but also, and especially, for his cognitive development. The recognition of new and dynamic possibilities of encouraging ability through such interaction has given rise to a demand for the integration of theoretical and practical learning. Two related questions deserve special attention:

- Which cognitive developments are directly facilitated by practical learning?
- How can the contents of theoretical and practical education be coordinated?

The skill which the initial level of the Hibernia School's practical training seeks to develop is a manifestation of a practical intelligence, which depends primarily on an *intensification of the powers of observation*. The working hand must feel out the nature of the material used, the movements of arm and tool must be grasped, internally by the senses of balance and motion and externally by the eye, and all changes brought about by the respective operations must be observed in such a way as to influence the further course of the work in hand. All tasks in the first few school years are keyed to a cultivation of the senses, which finds expression in the form of skills. Beginning with the seventh grade the pupils learn to describe, in relevant and exact detail, work processes they have already carried out. This strengthens the perceptive powers needed for the comprehension of processes and their inner dynamics. In the higher levels of the practical courses exact measurement and workmanship play an increasingly decisive role; training of the powers of perception is elevated to the level of precise observation.

The *training of judgment* is another field of cognitive development. The rudiments of this faculty can really be taught only in connection with practical training. All judgment is based on comparison; its object is to state whether and in what respect two things concur. Within the realm of practical work judgment functions as a means of evaluation of the activity and its results, which represent a concrete, objective reality. In the practical course this begins in the fifth grade, when the children in the needlework classes try on their socks or see whether a toy animal has the right shape, or those working with wood decide whether the carved handle of a planting-stick lies well in the hand. In succeeding years the processes of judgment become increasingly abstract and concerned with the function of the product (e.g. a mechanical wooden toy) and, in the end, with the expediencies of the production process, the necessity of adherence to norms, time limits, etc.

Such training gives the pupils direct insight into the interrelationship of thought and action. Every thought that has been translated into activity is tested by comparing the idea and its results. Practical reality constantly tests and corrects the developing thinking capacity of these young people; patterns of thought which have been developed in this manner are relevant to the realities of life.

The *capacity for conceptual thinking* lies on yet another, higher level of cognitive development. This, too, can be tied in to the young person's overall development in a fundamental way only by linking it with practical training, for the students should first use the process of abstraction to grasp the meaning of their activities in the classroom or the workshop. Understanding the laws governing their own actions will enable them to lay the foundations of habits of thought that, no matter how abstract, will never lose sight of reality. Practice of this sort begins, for instance, when a pupil's mistake is discussed with him or her such as why a drill-bit broke, why a particular material turned out too brittle, or why a product did not meet specifications. If the method is correctly applied, the study of manufacturing techniques or materials can offer an abundance of subjects suitable for exercising the faculties of cognitive penetration and evaluation of personal experience. This, in turn, should aid the young persons entering the technical level of production to grasp in advance the course and conditions of any given process, so that they can proceed to do their particular jobs independently, with insight into the process as a whole. For this reason planning and evaluation occur at every stage of the practical course. This is done step by step: at first - as, for example, in gardening or woodworking - it is related to only a few selected work phases; later, however, --- as in the making of the examination piece -- it is done by the apprentices independently for their entire projects. The *sense of responsibility* the young person seeks to discover and exercise can be experienced in this active relationship between cognitive insight and the work it is directing.

Self-observation, self-evaluation and the capacity to assume responsibility are characteristics of personal development and maturity. As has been demonstrated, they can result from a cognitive development facilitated by a practical education course.

Coordination of academic and practical subject matter can be accomplished most directly in the subject *Vocational Studies*. In addition to the study of manufacturing techniques and materials, these include vocational mathematics and technical drawing. Vocational Studies are initially lessons of a more general nature, in which the entire class participates. The content corresponds to that of the practical courses, which are still of a general nature as well. After the students have chosen their special fields, they receive lessons pertaining to that vocation only.

The specific task of Vocational Studies is that of constantly preparing the learner for the experiences that await him or her in their practical activities and for evaluating them afterwards. They perform a key function in the overall framework of theoretical learning. There is hardly a subject that cannot in some way be related to Vocational Studies and thus made to correspond to the processes of practical education. The temporal sequence of such correspondence varies. For example, spatial thinking and spatial expression are developed progressively, beginning with artistic exercises in black and white shaded drawing (using shadows to give a three-dimensional appearance), proceeding to perspective and descriptive geometry, to be finally incorporated into the production process as the ability to prepare and interpret technical drawings. Personal experience in the division of labour, the presence or absence of workers' participation, or the consequences of separation of competencies in planning and execution in industrial production is acquired by the young person before related questions and insights are evolved in Social Studies and Economics. The task of making a mechanical toy in woodworking corresponds to a Physics block period in which the basic principles of motion and mechanical transmission and transformation are discussed.

To ensure that Vocational Studies are always geared to practical application and therefore able to serve as a basis for a more comprehensive treatment of academic and practical subject matter, these lessons are, as far as possible, given by teachers responsible for the practical courses. What they have explained on the job -- at the workbench or the machine, in laboratory or garden, using the concrete situation to illustrate a problem -- can then be enlarged upon in the Vocational Studies lessons; the insights thus gained can in turn be utilized in later stages of the work, under the guidance of these same teachers.

Obviously, such continuous interaction has a very beneficial effect. It has been repeatedly observed that adolescents who have entered the Hibernia School in the 9th or 10th grade totally at odds with any type of learning, intellectual or otherwise, have become interested in learning after a few months and have begun to make progress, even in more academic subjects. Furthermore, even children with considerable learning disabilities, who have been carried along from the early grades, have been able to increase their capacities for cognitive learning as their independence in the practical course has grown. It is expected that a young person who has been able to attain independence with the help of the elementary approach as described and who has learnt to act on the basis of his insights into given circumstances, his own personality and his social environment, and their relationship to each other, will have the capacity for further development. For, as far as the needs and inherent possibilities of this age-level allow, the students have been rendered capable of grasping new ideas and channelling them into individual or social developmental processes in a down-to-earth manner. This requires a lifelong learning process, in which idea and practice correct and enhance each other -- learning from life for life.

Due to this principle of a permanent interrelationship between intellectual and practical activities, a number of sequential practical training courses are woven into the curriculum of the Hibernia School. These courses start with play and handicraft activities in the first few grades and gradually evolve up to the level of skilled craftsmanship for a journeyman examination on completion of grade 12.

The structure of these practical training courses is shown in Figure 2. Figure 3 explains in more detail how the students proceed from mandatory vocational courses in grades 9 and 10 to skilled training in a selected vocational area in grades 11 and 12 and finally to pre-college studies in grades 13 and if so desired in grade 14.

2.4 The Effects of the Practical Curriculum on Social Behaviour

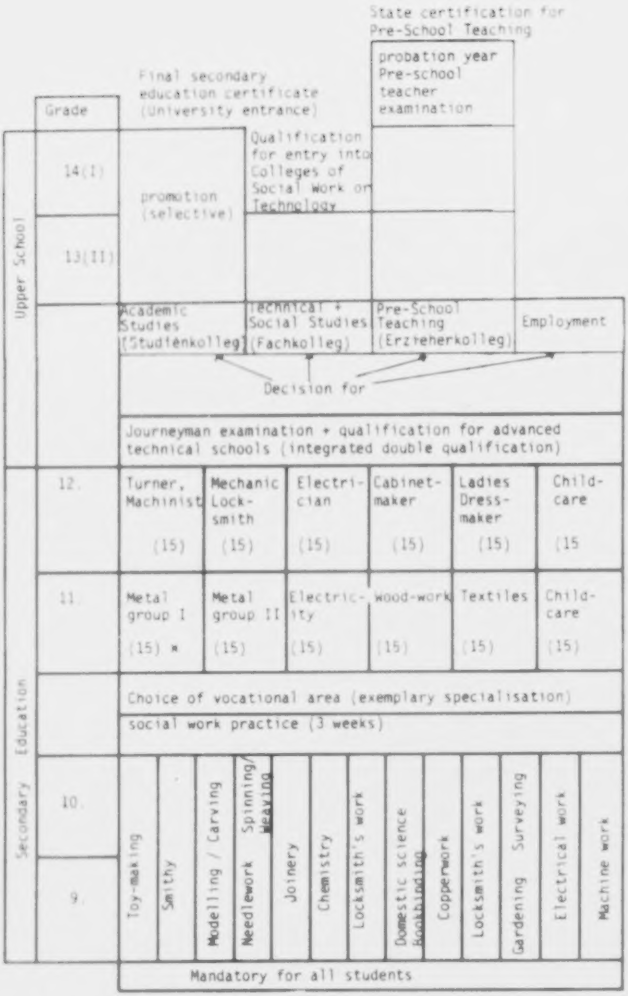
The educational concept of the Hibernia School is directed toward enabling young people to participate in our techno-industrial civilization with discernment and a sense of responsibility. Social abilities must be developed for this purpose. The young persons must have learnt to identify not only with their own interests but with the needs and concerns of their social environment as well. In the technically-oriented world of today only an active, that is, independently planned and executed process can accomplish this end.

It has already been mentioned that the young people in the workshops of the Hibernia School are part of the production process. For pedagogical reasons they learn by working only on actual production pieces. Whatever is done in the course of the practical training in order to acquire any general or specialized skill should always be not just useful, but definitely needed.

Fulfilling commercial contracts brings financial gain, which is used to help support the school. In its initial stage, when the Hibernia School had to construct its own buildings in order to become independent, the profits from the school workshops made a substantial contribution to the realization of this goal. Today the school is much larger, but this production still provides the financial basis which makes possible such a wide variety of practical courses by carrying the costs of materials, tools, machines and energy. The pupils know this.

Grades			
	Journeyman examination + qualification for advanced technical schools		Artistic and theoretical subjects
12	Specialized level	Machinist, Turner, Mechanic etc.	
11	Vocational training in a recognized apprentice trade	Cabinet-maker Electrician Ladies' Dressmaker Child-care	
	Decision as to a special vocational field		
10 9	Basic Vocational Training	Social pedagogy: Domestic Science (9) Toy-making (9 + 10) Games Organisation (10) Textiles: Needlework (9) Spinning and Weaving (10) Electricity: Electrical work (9 + 10) Metal: Blacksmith's work (9 + 10) Locksmith's work (2x9) (2x10) Machine operation (9 + 10) Copper work (9 + 10) Wood: Cabinet-making (9 + 10)	
8 7	General Work Study (Elementary crafts and technical training)	Domestic science Copper-work Woodwork/ Cabinet-making Forestry Basket-weaving Gardening Needlework	
6 5 4 3 2 1	Lower School	Carving Fundamental practical knowledge Modelling with beeswax/clay Needlework Games/Plays	
	Kindergarten		

Figure 2: Stages of the Practical Training Courses in the Curriculum of the Hibernia School


State certification for Pre-School Teaching
probation year Pre-school teacher examination
Final secondary education certificate (University entrance)
Grade
Qualification for entry into Colleges of Social Work or Technology
14(I)
13(II)
12.
11.
10.
9.
Upper School
Secondary Education
promotion (selective)
Academic Studies (Studienkolleg)
Technical + Social Studies (Fachkolleg)
Pre-School Teaching (Erzieherkolleg)
Employment
Decision for
Journeyman examination + qualification for advanced technical schools (integrated double qualification)
Turner, Machinist (15)
Mechanic Lock-smith (15)
Electri-cian (15)
Cabinet-maker (15)
Ladies Dress-maker (15)
Child-care (15
Metal group I (15) *
Metal group II (15)
Electric-ity (15)
Wood-work (15)
Textiles (15)
Child-care (15)
Choice of vocational area (exemplary specialisation)
social work practice (3 weeks)
Toy-making
Smithy
Modelling / Carving
Needlework Spinning/Weaving
Joinery
Chemistry
Locksmith's work
Domestic science Bookbinding
Copperwork
Locksmith's work
Gardening Surveying
Electrical work
Machine work
Mandatory for all students

* Number of workplaces available

Figure 3: Differentiation of Vocational Studies from Grade 9 onwards

They know that the quality of their work not only contributes to their own progress but makes a vital contribution to the continued existence of the school. This is important in helping them to identify with "their" school, for a community is a reality to the individuals only to the extent that they directly participate in its realization and continuation in such a way that its existence depends on everyone's cooperation. Every young person becomes conscious of this as soon as work starts in the school's workshops (7th grade) and later in jobs outside the school; such awareness has its effect on more than just those directly concerned. The ability of do one's work in such a way as to serve the community as a whole is experienced at the Hibernia School, and not only because the older students' production contributes to the school's finances - although this situation lends the workshop activities a special immediacy, of which the social implications can only be fully grasped by students in the upper grades. However, it can be experienced by the younger pupils in other ways: when they help to lay out and care for the school's grounds in gardening classes; when a group of students in electrical training is doing maintenance work on the school's extensive electrical network; when things that have been made or repaired for the school in the joiners' workshop are carried through the corridors; when as part of their training, they act as assistants in the school kitchen or the kindergarten; or when they, their parents and teachers join hands to complete a building that has been put up in the school grounds.

It is not difficult to see that the experience of community effort in accomplishing tasks and the exercise of mutual assistance can be conveyed especially effectively in connection with practical learning. In this area there are very few tasks that can be carried out by one single person; common effort is frequently necessary. Where work is divided, the result unites the separate contributions, and an individual can quickly see how necessary it is to keep in mind what the others are doing while working on his own part and how everyone, singly and together, must see to it that the result is one coherent whole.

With appropriate educational guidance, the element of cooperation can become second nature, both in efforts to overcome difficulties and in learning from each other's mistakes. To achieve this, a great degree of frankness must reign among the members of the group and a willingness to discuss one's own failures with others, to try to see how they come about and what can be done to avoid them in future. In addition, each member of the group must realize his responsibility for alleviating or offsetting the weaknesses and disabilities of the others. The foundations for these attitudes must be laid prior to the onset of puberty. If this succeeds, it will foster, after adolescence, the growth of a sense of community which includes not only the willingness and ability to help others, but also that of a conscious acceptance of their help when needed.

Again, these are qualities which are important in cognitive development as well; but they can only be conveyed as an elementary, directly-experienced process by means of the practical courses and the activities they entail.

2.5 Early Stages of Developing Practical Capacities

An increasingly important part is played in the Hibernia School concept by the realization that the immense possibilities offered by a technical civilization can only be utilized by individuals who have also gone through non-technical stages in their education. No one can retain independence as an actively participating, socially committed individual in our contemporary working world unless endowed by emancipatory education with the *practical capacity* to do so. Education is only emancipatory if it enables the young to develop and stabilize their individual personalities before they are confronted with the conditions of a civilization governed by technology. The recognition of this led to the sequential organization of the practical courses, beginning with play and proceeding via successive stages of artistic and manual work, to work in technical production. The declared goal of self-reliance in a working world governed by technology makes passage through these preliminary stages of technical behaviour indispensable.

The aim is not merely to adjust to the demands of society, science and technology, but to acquire the capacity to participate creatively and responsibly in all of these spheres. If the adolescent is to be able to work with the same dedication as that of a child at play, the urge to be able to do something for the good of others must be methodically awakened in the growing child and developed step by step until it has become an underlying current, giving direction for all phases of life.

Initially the tasks set for the children reflect their own personal needs or those of their parents, so that it is easy for them to see the purpose: for instance, in the first grade they knit a sheath for a recorder; in the second grade they crochet potholders, and in the fifth they knit a pair of stockings, using five needles. At the stage of more accurate craftwork the projects are taken from the immediate surroundings of the learner: the propagation of ornamental grass in 7th grade gardening, for example, or building a flower-stand in wood-working. However, the students are now also more and more frequently asked to do things for people with whom they first become acquainted through the task assigned and whose wishes they must take into consideration, such as when kindergarten furniture is to be constructed in the 9th grade.

Thus the purposes of the learner's work become increasingly objective until they have taken on the distance characteristic of technical production, which can be overcome only by a completely new sort of social energy, something which can be acquired gradually in the course of such practical training.

A further component of the process of teaching true occupational competence is that the adolescents learn to devise the solution to a problem themselves. Once again, this must have been achieved before they enter into technically directed production, in which planning, execution and evaluation are the responsibility of separate groups of people. No one, however, is in a position to plan anything of real benefit to society, if he cannot - at least in principle - carry out his own ideas. Nor should anyone be required to carry out anything which he could not at least in principle have invented and planned himself, that is, the idea of which is open to his understanding. This is why, from the very beginning, project objectives are generally stated in such a way that their completion can be the result of cooperative effort. The learner should try out his own designs independently, but under the watchful eye of the workshop teacher responsible, who is ready with advice if needed.

In this way mechanical wooden toys, for instance, are designed and constructed by 8th graders themselves, just as 10th graders might have to draw up and produce a technical device for the serial production of some object.

The same is true of the capacity for self-evaluation and cooperation. Technically directed work is work that has been organized by thought. Therefore, whatever is done in this process cannot be evaluated by direct usage, but must be dealt with mentally. This is accomplished by means of mathematically established specifications (norms) and clearly defined steps. Prior to contact with this situation the students' development must have achieved a conformity with specifications in general and the productive activities in particular. In the initial stages these specifications must be a result of the function of the article; they are first understood by the child through sensation and feeling and are in the nature of an aesthetic judgment, as with the knitted stockings or the sheath made for the recorder.

To have experienced their ability to establish their own standards and, with their aid, to evaluate their own production efforts, is of paramount importance to adolescents. The prerequisite for this is that the object to be produced is visibly meaningful, as in the case of hand- made projects. Someone who has learnt to do exact work according to specifications he has set himself, who has learnt by experience how a work process can be divided up and how various steps are allotted to the members of a working group - as in the production of a bolt - remains independent even when he is later given stated specifications to which he must conform, as is the rule in technical production.

What has been said up to now should illustrate why crafts and manual work are considered preliminary to technical education at the Hibernia School and why they are indispensable to the adolescent in learning to participate in the work processes of a technical civilization in a socially competent manner.

2.6 Broadening the Scope of Employability by General Practical Education and Vocational Specialization

In considering a basic practical course which is not intended to lead to qualification for any particular vocation, but to prepare for acquiring such qualification, the question arises: Which subsequent activities can be based on those learnt earlier? Versatility in practical and manual skills, together with mental agility has proved capable of considerably reducing the length of the training period in any special field: In the course of 12 years of school approximately 60 per cent of teaching time is allocated to general educational subjects, 20 per cent to artistic education and 20 per cent to general work study, basic vocational training and training specific to the particular field in which the apprenticeship examinations will be taken. Consequently, practical training is divided into two stages.

First Stage: The stage of *general practical education*, which serves to increase learning skill in practical and theoretical fields. This first stage can in turn be subdivided into:

- the schooling of body movements in children's games (kindergarten),
- guided activities in crafts, gardening, etc. (grades 1-6),
- manual work in various fields (grades 7 and 8),
- technical work, organized on principles of efficiency, and production (grades 9 and 10).

Second Stage: The stage of *specialized vocational skills and knowledge*, which can at this point be acquired by utilizing the learning abilities gained in the preceding general stage (up to grade 10). Their acquisition serves as an example to the young person of how to become familiar with the demands of a particular occupation, a process which can be repeated in later life. The choice of occupation then takes on the character of a decision to enter a (prototypal) field of vocational learning. Over 90 per cent of the Hibernia School's graduates are working in fields other than those in which they were trained at school; in doing so they have acted in accordance with the basic idea of general practical education; they have learnt, in one prototypal field and consistent with their age-level, a particular vocation, without being tied to it for the rest of their days.

This calls for a new way of looking at vocational education. The speed of technological and economic change makes it almost impossible to forecast future qualification needs and even more difficult to fit them into the rigid framework of traditional vocations and training practices. That means that we must say farewell once and for all to the idea of *completing vocational training* at a particular level of development and, instead, invest our energies in equipping young people with vocational learning ability. This is just what can be achieved by general practical education. We must begin by establishing a general working ability in the young person and proceed from there to the skills required by the particular vocational field.

The brief period of time in which the practical examinations in specific vocational fields are prepared at the Hibernia School illustrates the possibilities. But the systematic organization of vocational training exemplified in this programme cannot be really effective unless it is the final stage of a general practical training course that embraces the entire transitional process from child's play to technically directed work.

3. THE HIBERNIA SCHOOL: INTEGRATED CURRICULA FOR GENERAL AND VOCATIONAL DEVELOPMENT

3.1 General Practical Education in Grades 1 to 6

The lower grades are of a uniform nature, with artistic principles reflected in all lessons.

Practical training is already stressed in the curriculum of grades 1 to 6. It begins with exercises in painting, drawing and playing the recorder and extends to the end of this level in the 5th and 6th grades, in which artistic handicrafts are taught - carving wooden animals or shaping them with the rasp, or making darning eggs, planting-sticks, and wooden spoons, to name a few - as well as such things as gardening.

Altogether this could be named the handicraft dimension of the curriculum for grades 1 - 6, although the impact of these activities reaches far beyond the acquisition of simple skills. The full scope of educational experience drawn from handicraft activities is explained below.

The purpose of the first stage of handicraft instruction is to train the children's hands. Skill is a manifestation of practical consciousness; guiding the children so that they become aware of the potential of their hands is an important step not only in the course of practical education, but also for the later development of independence in the realm of conceptual thinking. The fact that children really grasp only what they have first done themselves is obvious and represents an underlying concept of the Hibernia School.

It is also the reason why, from the very start, tools and materials should be handled correctly. All tools have been developed for good practical reasons; using them correctly therefore has a direct educative influence.

In needlework the children first learn to knit and crochet, then to sew and to net, exercising both finger dexterity and

Grade	2-hour lessons throughout the school year			General knowledge Block Period (*) combined with handicraft practice
	Needlework	Modelling/Carving	Gardening	
6	Sewing and stuffing of dolls and toy animals	Rasping of utensils and free forms	Work providing experience of the annual vegetation cycle	Forestry block period in the School cottage 2 weeks full time
5	Knitting with 5 needles (socks)	Handcarving, clay modelling	Work providing experience of the annual vegetation cycle	
4	Embroidery (cross-stitch)	Wax modelling		Agriculture and bread baking periods, house-building period, approx 4 weeks each in main lessons
3	Embroidery	Wax modelling		
2	Crochet	Wax modelling		
1	Knitting	Wax modelling		

* The term "block period" refers to lessons that are given every day at the same time (e.g. 7:45-9:25 a.m.) over a period of 3-4 weeks in one subject or practical activity, which is then dropped and not taken up again until a much later date. Such concentrated effort in a single area is followed by a period of "forgetting", a creative lull or breathing spell in which the subject is deliberately allowed to sink in and be forgotten, a procedure which has a beneficial effect on the learning process. New aspects and insights seem to spring up automatically by the next block period in that subject. On the other hand, the block period itself has its own internal rhythm with introduction, climax and conclusion. For academic subjects, this means that the pupils get acquainted with a particular, limited area and its subdivisions; in artistic and practical training, their energies are directed toward producing a specific object while learning certain techniques.

Figure 4: Handicraft Curriculum for Grades 1-6

proper use of the instruments. These are practical activities of an artistic nature, depending to a great extent on rhythmic movement. They should be seen as an integral part of the schooling in physical coordination, which also takes place in the walking of figures, in eurythmy and in a wide variety of children's games.

Knitting in the first grade is a continuous exercise in concentration for the children. The central problem is to loop stitch through stitch in the proper fashion. One moment of absent-mindedness is enough to cause the dropping of a stitch, which can usually be caught up again only with adult help. In this way manual work induces attentiveness and concentration on the work in hand. Slowly but surely dexterity and a certain awareness are developed in the hands. Thus, in a manner appropriate to the child's age, an external behavioural pattern can be used to practice a quality which is no less important later in the process of connecting one thought to another: the ability to combine alertness and concentration, without neglecting the artistic touch.

In the second grade they learn to crochet. Here the technique lays stress on only one hand's activity, whereas in knitting both hands are equally engaged. This change of pace keeps the children from being distracted from the conscious use of finger and hand by the steady routine required in knitting. Being an easier technique, crocheting does not rivet the children's attention entirely to the technical process and leaves them greater freedom for artistic considerations. The needlework projects chosen for the 8-year-olds of the third grade correspond to the needs of this age-group for increased awareness and detachment from their work.

In grades 3 and 4 the children also learn something about bread-baking, house-building and agriculture through direct involvement in such work. Here, too, they learn by imitation, by being given the chance to grasp and comprehend through practical participation; at the same time their understanding of the interrelationship of man and nature is aroused. Such lessons have a key function: they lay the foundations for extensive learning processes. The children get to know a procedure step by step, through their own exertions. This leads to comprehension gained not merely by watching or imagining, but in association with numerous experiences and eager activity.

The 4th to 6th grades become increasingly able to consciously observe their practical activity and consider it as a whole. Sewing is now introduced in the form of objects which must be conceived as a whole, before work on the separate parts can begin, progressing from flat forms to three-dimensional ones and, finally, to hollow objects (bags, stuffed animals, shoes). New materials are introduced correspondingly: clay and wood, for example, have more character and offer more resistance than textiles. The types of activity become more demanding: handling a carving-knife requires care and correct procedures, woodworking with the gouge calls for differentiated employment of the hands, and accurate sewing requires attention to detail.

Every new skill is taught step by step. In the first task in woodworking - hand-carving - the piece is still held close to the body in the region of the child's heart; not until the children have begun to use the rasp for shaping wooden animals is the wood clamped into the vice, and only then does the child take one step back from it, inwardly as well. Even then the tasks selected are ones that begin with a whole piece in which the specific form and details are "felt out", in a process of discovery while doing. This applies alike to wooden animals made with the rasp or carving-knife and to dolls and stuffed animals made in needlework lessons.

The children are also given the opportunity of growing into the idea of *measurement*. The first measurements influencing their work are those which are taken in the process of making simple articles of clothing (stockings, mittens) and receptacles for familiar objects, such as the sheath for a recorder. The transition to the next stage, at which the child learns to work according to given specifications, occurs in woodworking lessons in which serviceable objects such as planting-sticks, darning eggs, cooking-spoons, etc., are carved, whose shape and size must conform to their purpose. Here again, personal use, the necessity of taking it in one's own hand, can set the standards; but the obligation to keep in mind a given purpose is stronger than in previous assignments and already heavily influences the sequence of steps in the work. It is important for the children to see how the (for them) new element of purpose is linked to that of beauty with which they have already become familiar. This stage demonstrates that, if an object is made to fulfil its purpose successfully, it will be pleasing to the senses as well. A desire should be awakened in the growing child to act in this sense in later life, so that the results of its labour are not merely useful, but always combine this utility with aesthetically pleasing qualities.

Another activity based on direct experience and resulting in sensitization of the child is gardening, which begins in the 5th grade. In these lessons the work and therefore the experience gained are governed by the growing cycle in the course of the year. This sort of work engages the child's entire body. Whereas finger exercise was primarily emphasized in the needlework classes of the first few years, what is now called for is the shaping touch of the whole hand, the strength of the arm and the solid stance. This is especially so in gardening, since many of the things that must be done there require the use of the whole body to be properly executed. This is beneficial to the child's further development; for when, at the onset of puberty, the child loses the natural rhythm of motions, the meaningful activities previously learnt can help to gain conscious control of movements and develop a harmonious coordination of one's own. Physical education and eurythmy lessons are methods of reinforcing this effort at this age-level.

3.2 Introduction to Vocations in Grades 7 and 8

The educational needs of adolescents are the determining factors in the choice of the subjects offered in Grades 7 and 8. As the young person becomes more conscious of the world around, the capacity to understand cause and effect increases and an awareness of perspective and the spatial dimension develops; in the practical courses the adolescents express their desire to place their activities in a social context. Now is the time when they are no longer interested in working only for their own needs or those of their immediate environment, but prefer to satisfy the needs of others, that is, to take on outside orders. They are not yet being trained for a particular vocation; the practical activities are intended as a contribution to their overall development. Nevertheless, work is now being used to promote appropriate age-related development.

This new situation calls for a change in the way the curriculum is organized. Up to then practical activities were taught in regular lessons; now they take place in block periods. This allows the individual subject units to be designed as projects, with a particular task at the core, which serves as a point of reference for each step in the learning process.

Now practical learning also takes place in the school's workshops, in which older students who have already begun their specialized training are involved in production. From this stage onward the curriculum covers the whole day.

Grade 7	Forestry fieldwork	Needlework	Gardening	Woodwork: axe and saw	Needlework	Woodwork: draw-knife	Gardening		
Grade 8	Needle work	Woodwork: planing	Metalwork	Domestic science (cooking)	Basket making	Woodwork: toys	Gardening	Performance of a play	

Note: For a definition of block periods see note under Figure 4.

Figure 5: Practical Block Periods in Grades 7 and 8

Special attention is paid at this stage to a well-founded knowledge of *materials*. Fieldwork in forestry also serves this purpose. Anyone who has had the personal, in part strenuous experience of planting and caring for growing trees has gained from it a respect for nature and the labour of others. How many hands, for instance, are involved before wood has been turned into boards, which can then be put to further use! Care in the treatment of materials and respect for the labour of those who have invested their skills and energy in such work are indispensable to anyone who wishes to retain an awareness of the social significance of his work in the middle of the impersonal world of technical production. For this reason training in woodworking begins with branches or pieces of the treetrunk in which the relationship to the familiar concept "tree" can be felt, something that is far more difficult later on at the more advanced stages when dealing with chip-boards.

Working with metal is introduced in the 8th grade, the first material in this category being copper-sheeting, out of which bowls and other containers are hammered. These hollow forms have a special significance at this stage, corresponding as they do to the inward flow of the spiritual development of this age-group. Lessons in basket-weaving and the carving of wooden bowls are also given for this reason. In addition, other tasks are now set which require a "constructive" method - that is, in which separate parts are joined together. One example of this is needlework, in which more difficult garments are made, such as shirts, smocks or aprons; another is woodworking, in which wooden toys are produced that can be set in motion by simple mechanisms (cams, eccentrics, levers). This again is an anticipation of a characteristic of the next stage, although still in keeping with the total framework of this second period of life. The process of "invention" along with that of participating with others in solving such problems in construction, trains the practical imagination which is already beginning to develop. At this level the determining factor is still the concrete model, whether it be an object or the teacher's skill. Nevertheless, an inner urge to make a joint effort at "re-inventing" the construction process is always manifested, as is repeated "testing" of the "proper method" demonstrated by the teacher with ideas of one's own, so that it can then be recognized as the right way of doing the job. The teacher's advice is now sought as that of an expert authority.

Since gardening, woodworking, copperwork, sewing, basket-weaving and other manual activities are increasingly designed to fulfill set purposes, taking on the nature of craft training, practice in the arts must be continued separately. This is done by providing block periods for the various arts and introducing techniques that require intensive practice.

The following description of a teaching process is intended as one example of what is done in grades 7 and 8.

Right at the beginning of the woodworking curriculum a solid knowledge of materials must be established, based on experience comprehensive enough to include ecological relationships.

To do this, a period of fieldwork in forestry was instituted, in which the boys and girls spend a good two weeks becoming familiar with the forest, its animals and the people who work there. The students leave behind their homes, the automobiles, the industrial and urban environment, and live together with their class teacher and their crafts or gardening teacher in an isolated area of the forest, working with the forester and his assistants.

The forester talks to them about the landscape, the game they are likely to meet, the timber and how it is sown, planted, cared for and felled, the importance of the forest to them, about air, water and economic value.

What sort of work do the students do? They dig up the ground for a nursery and weed it; they transplant saplings or set out young trees, clear thickets, cut fire-breaks. Or there are young plantations that must be freed of self-seeded mountain ash or birch saplings. Or branches to remove from birch trees so that the wood will be better suited to commercial purposes later on. Or branches must be removed from a clearing and can then be used to make a crackling, smoking bonfire or laid in long piles to decay until they have turned into earth once again. And yet another group can hoe the stalking-trails or clear the many paths of litter left by weekend hikers.

Trees are felled, the branches removed, sawn, and their ends given points, to be made into something useful on the spot: a lookout, a feeding trough or a fence, projects in which the entire class participates in the course of the fortnight. Thus, alongside all the separate tasks relating to the cultivation, care and protection of the forest, something is made which represents the work of hands united.

Through these activities, the students directly experience a complete production cycle from growth to felling and building. It is important that the work they are given should be not merely an exercise, but something that is really needed. All students write down their impressions of the forestry work and illustrate their account with sketches and drawings; this consolidates their experiences. In the evenings or early mornings they may sit with the forester on the lookout or go stalking, learning the arts of keeping silent, watching, listening, and observing.

Now follows the first woodworking block period, the first stage of specialized, accurate craftwork, in which they begin by learning to chop and saw, that is, the basic handling of the splitting wedge, axe, hatchet, bowsaw and hammer. These tools are used to make firewood: treetrunks or logs are split, sawn into lengths and chopped. Next, logs or branches and other appropriate pieces of wood are fitted together to make a climbing-frame, a log cabin or some other playground equipment for the kindergarten. The way in which they work with axe and saw is still very similar to what they did in the forestry period.

However, the next two block periods, in which the students learn to handle the drawknife and the plane, are more strongly directed towards learning and practising the specialized skills of the craft. It is a help to everyone if each step, each manual operation is first discussed and demonstrated by the teacher for the whole group, so that the skills can be learnt by imitation. This schools their awareness of their own hands and their potential.

To begin with, they work with the drawknife. Round logs, branches of about 8-10 cm in diameter, are split in half and the cut surfaces then levelled off with the knife. This requires a feel for the wood, its grain and structure. Next, a second level surface must be cut at right angles to the first. These quarter-logs are then cut to the required length, glued and nailed together to make a bird feeding-station or a nesting-box.

Planing is taught as the first block period in Grade 8. Strength, patience, stamina and skill are needed to become familiar with the plane and how to handle it. Here, too, the material is logwood. The desired length is cut from a treetrunk, split in two and planed smooth with the roughing- and double-planes. The piece can be planed to form a half-round board or a thick plank for a small bench. Each student then planes a square-cornered block from a piece of logwood, then splits it twice to make four large sticks; these are then planed to form four legs, tapered at one end. Four holes are drilled in the plank. The rasp is used to give each leg a peg, so that, when everything is glued together and the legs are levelled, the result is a flower-stand or a bench. The students can proudly say that they made every bit of it themselves from a chunk of tree.

The individual steps in the process are: sawing into lengths, splitting, planing the surfaces, cross-grain planing, bevelling, planing and measuring square-cornered blocks to specification, dividing, planing a form, drilling holes, rasping pegs to fit, wedging, gluing, cutting legs to the right size, finishing and polishing, oiling and varnishing.

These activities are relatively easy for the students to execute by simply imitating step by step what the teacher demonstrates, gaining confidence and experience as they practise independently. The determining factors are still demonstration and imitation, although some independent thinking is needed to acquire insight into the craft.

The succeeding block period is given over to the making of movable wooden toys. It is planned in such a way as to help the students to gain confidence in their own ideas, plans and designs. They must learn by experience that their powers of imagination combined with their manual skills will lead to a well-done piece of work.

Just how does making a movable toy encourage practical thinking? The toy must leave room for the imagination of the child who is going to play with it. That means that its builder must not predetermine every detail of its use. It should be versatile and robust. A variety of movements can be conceived, for instance, for something that the child can push or pull around. This calls for wheels; then comes the question of how the forward and backward motion can be transferred to a different direction-- that is, from the horizontal to the vertical. To do this, gears must be constructed -- knowledge of mechanics comes into play. As in the preceding block periods, the students carry out each step by themselves, by hand. Each part of the toy is made from logwood, split, sawn, planed, grooved and joined. Great care is necessary if the parts are to fit properly, as is exact knowledge of mechanics if the transmission of motion is to function.

Many students are fascinated by this problem of transferring motion from one direction to another. Once they have got into the inventing process, their own experience will tell them which ideas can be put into practice. At this stage of skilled craftsmanship, practicability is the criterion by which the accuracy of their thinking is tested and corrected. Some students, however, being too timid, or unable to develop ideas of their own, keep to the imitation of previous models. In such cases cooperation between workshop teacher and class teacher is particularly important for consultation as to how unimaginative students can be stimulated to a greater degree, in other subjects as well.

Many can be helped by a special kind of group work in which all students construct their own toys - not just a part of something - but they are given suggestions by other members of the group, who, in the case of difficult operations, collaborate in discussing the problem and demonstrating the various procedures.

3.3 Basic Vocational Training in Grades 9 and 10

A consideration of the nature of the third period of life (ages 14-21) is essential to the conception of the further learning stages of the practical course. The motivation for learning changes: whereas previously it was determined by the model provided by the teacher, now it increasingly becomes a matter of "objective" necessity. The increased capacity for thought and judgment in the young person demands problems that can be solved by reason. Adolescents want to learn to work according to their insights; they want to understand the purpose of their work and why they should do it in just this way, etc. Probably no later stage in life puts its questions in such radical terms; in dealing with such questions as well as many of the inhibitions of this age-group, the practical course has proved especially effective. For in the process of discovering themselves, the students need criteria and standards which are objectively accessible to them, independent of their teacher. Such criteria can be found in the serviceability of the things they have made, in the way in which their work dovetails with that of others, according to plan, and finally in the observance of specifications agreed upon in advance. The sliding-gauge relentlessly shows up inaccuracies in filing, milling, turning, etc.; here the students can see their strengths and weaknesses in an objective light and correct themselves accordingly.

Of course, these abilities, too, must be acquired step by step in a guided process. Advance planning and subsequent evaluation are practised; before the students learn to work according to pre-established plans, they make their own plans in the form of a technical drawing to be followed in their work. Such practical experience serves them, as a developmental aid, not in a verbal-intellectual way, but by causing them to be physically active and to act in a purposeful and practical manner. This has its effect on their psychological development. Their vague wish for self-determination turns into a concrete endeavour to become independent of others in their judgement, decisions and deeds.

The basic courses in technical craftsmanship, such as blacksmith's and locksmith's work therefore begin at a time in which the students demand such impersonal, objective criteria. At this point tangible assignments which can help them to "grasp" their own being are an important educational aid for which there is no substitute. If the steel burns up, or the measurements are inaccurate, or the parts do not fit together, there can be no question as to who is to blame. The clarity and irrefutability of this constant checking are an essential element in the task of properly guiding this age-group. Success and failure are necessary experiences for young people. While carrying out these manual activities, step by step, they learn to take themselves in hand. The process of overcoming difficulties and finally the finished product itself provide them with a feeling of self-approval which is objectively justified. This is why such manual training is compulsory for all students.

These processes are introduced and the basic principles learnt by practice in grades 9 and 10. This is done through operations of a technical nature which, however, continue to make use of the skills of crafts practised earlier. These manual activities culminate in the spheres of gardening, joinery and work at the forge. In gardening the students are given tasks which can only be fulfilled if they use their practical skills to increase their knowledge, for instance, in raising and caring for plants, or learning about soil and fertilizers, or dealing with crop rotation and the distribution and lay-out of gardens. In joinery all students are given the chance to discover their own craftsmanship; in the 10th grade small pieces of furniture are built or, at times, musical instruments are made for the kindergarten or primary grades. Work at the forge conveys an experience of fundamental importance for adolescents: that they can control their own strongly burgeoning energies by force of mind and that they will be all the more sucessful in this effort the better they succeed in discovering the proper working rhythm within themselves.

From the rather elemental type of activity at the forge, which demands total engagement, the students progress to metalwork assignments that require increasing detachment: They are led through various stages of locksmith's work done according to specifications and at last arrive at the point of working with machine tools. In the first stages of hand-carving they were working very close to their own bodies; later they learnt to clamp the piece in the vice and stand back to work on it. In a similar manner they now adjust themselves to the operations of the machine, setting and checking it, of course, but at the same time "observing" its "activities". The detachment required for setting up and monitoring technical operations is exercised at this stage of basic technical training, which concentrate on intelligent handling of energy and natural processes, as for example, in the electrical shop and the chemistry laboratory.

Figure 6 shows how the block periods, in which these particular techniques are taught, are arranged. The lessons are held in groups of 7 (machine operation in groups of up to 14 students). Each block period lasts 3 weeks and is given in the afternoons.

Second Cycle	Grade 9	Toy-making	Work at the forge	Chemistry laboratory work	Needlework	Joinery	Locksmith's work	Domestic science
	Grade 10	Toy-making	Work at the forge	Chemistry laboratory work	Spinning	Joinery	Locksmith's work	Bookbinding
First Cycle	Grade 9	Copper work	Locksmith's work	Gardening	Electrical work	Machine operation	First Aid	Copper work
	Grade 10	Copper work	Locksmith's work	Surveying	Electrical work	Machine operation	Children's games	Drama production

Figure 6: Arts and Crafts Block Periods in Grades 9 and 10 (3 weeks each, instruction in the afternoons)

As examples for the developmental implications of these block periods, blacksmith's work (work at the forge) and locksmith's work will be analyzed here in more detail.

Through blacksmith's work in the six-week block period in the smithy the students become familiar with a time-honoured handicraft while learning the skills needed for working with red-hot metal.

First the class must learn certain fundamentals: handling the hearth and the tools and controlling the fire. In this preparatory phase some subjects dealt with previously in vocational study lessons, such as the mining of ore, the production of crude iron and modern methods of steel production, are reviewed briefly. The students thus begin the connection between theoretical vocational studies and practical workshop procedures; some concepts and technical terms are only now fully understood.

The time has come to light the fire. The colours of the heated steel are explained, and the students learn to recognize a correspondence between the steel's colour and its temperature. After they have tried out the colour-scale, they proceed to the actual forging. This begins with exact instructions concerning the use of the hammer and working procedure.

Hours of concentrated effort are needed to learn the correct coordination of colour, speed of cooling, use of the hammer and so on; and a great deal of advice must be sought from the master craftsman before the student succeeds in producing a usable piece.

The first few days in the smithy are devoted entirely to practical work at the anvil: square points, round points, flat tips, exercises in forming, flattening and bending -- all make for growing dexterity. Theoretical exercises follow: the students are asked to make exact technical drawings of the pieces they have forged. The effort at abstraction required for doing technical drawings from various angles reinforces their mental abilities in a way similar to that in which work at the forge enhances their physical strength and skills. Calculating the bar length required for making a cone-shaped tip causes the students particular difficulty. In their own work at the forge they have seen how the raw material is hammered out and that the resulting point is three times the length of the original round bar; but precise calculations cannot be done without using the abstract geometrical and stereometrical formulae already learnt in their mathematics lessons. This impresses upon them the importance of mathematics as an essential foundation for practical work. Once they have recognized that theory and practice are both necessary for successful work, they have taken an important step in their educational career; for this enables them to see the interrelationship of various subject areas, justifying the attention given them.

In *grade 10* the psychological situation has changed somewhat. In the 9th grade the students' energy and attention were confined to the acquisition of elementary skills. By the 10th grade the students have already gained enough experience and detachment from their activities to be able to plan their work intelligently and produce more ambitious items, such as flat-chisels, mortise chisels, awls, candle-holders, triangles, fire tongs or key brackets, continually relating planning to performance. In this three-stage process of planning, execution and checking they become familiar with the basic requirements of technical efficiency in this field, of which well-considered teamwork is a part.

In the first period of locksmith's work in the 9th grade the objective is to acquire elementary skills in filing and measuring.

The students' first assignment is something that they can produce in its entirety, such as a carp frame, but which has separate parts; precise procedures and specifications for all parts have been laid down by technical drawings.

To begin with, these parts are still produced one after the other by a single person; in a second assignment they are made by several people working independently. This helps them to grasp the principle of division of labour. The object to be produced by the team may, for instance, be a sliding bolt. One pupil files the base plate, another the two tongues, and a third the bolt that is to slide back and forth between plate and tonques. In this work the students gain basic insights. They directly experience the advantages of division of labour, as long as the task is one which can be sensibly divided and the separate parts are sure to match flawlessly in the end. Working in this way, a group can produce more and higher quality articles than was the case previously when each individual made the entire object. And they now see that this division is impossible without strict adherence by everyone concerned to the norms and measurements agreed upon; they henceforth accept technical drawings as a suitable means of laying down specifications of shapes, measurements and qualities. It is brought home to them with great forcefulness that if just one individual fails to work with complete accuracy, neglecting to observe a given measurement, his work will not correspond to the rest and the entire job will be useless.

3.4 Employability Training in Grades 11 and 12

Vocational training in the Hibernia School is not considered to be a final decision for a lifelong career, but a specialized field of learning in which certain typical abilities and skills of a general nature, which contribute to personality development, can be acquired and systematically practised. Here, in contrast to cognitive (theoretical) education, the young person is to build up kinetic aptitudes and exercise them at the practical level. In this sense vocational training should be looked upon as an *instrument* of general (practical) education and as a sphere of educational experience in which the students learn by practice to do a specialized job, something they must be able to do throughout their entire lives. Looking at the structure of the upper grades, it is therefore evident that specialized vocational training is regarded as a *field of learning for all students*. At the same time specialization, properly understood and learnt (i.e. as an integral part of a comprehensive educational programme), lays the foundations of independent thought and action.

And finally, the "double qualification" provides much greater latitude for personal decision: Successfully completed vocational training opens the way to qualified work in industry, while the theoretical (and artistic) qualifications simultaneously (or subsequently) earned make possible a continuation of studies at the university level.

The decision as to the field of specialization to be chosen -- metal-work, electrical work, woodwork, textiles, or child-care -- is made at the end of the 10th grade and takes effect at the beginning of the 11th. The reasons for this timing are to be found in the developmental and educational situation of this age-group: In the 9th grade there is a marked interest in many different areas of practical activity, and the young person gets to know 12 different disciplines. In the 10th grade the students penetrate further into these areas, meeting the qualifications of basic vocational training. The basic vocational training received by all in the fields named above is then narrowed down in the 11th grade to a single field in which the students begin to specialize, going through the systematic vocational requirements of a 2-year specialist training programme. In the process they gain competence not only in their chosen field but in social conduct as well, something needed at this age for the development of character and self-sufficiency.

Group-formation also undergoes a change: the students are now working as a team in the field of their choice and soon see that the demands made on their specialized abilities (with respect to exactitude, responsibility, independence) and social conduct have acquired a new tone, stemming from the exigencies of the world of work.

Thus the student is distinctly aware of the transition from the 10th to the 11th grade as a decision to specialize in a particular field of learning.

To continue the development of the young person's creativity, and to counterbalance the narrowing effect of vocational specialization, advanced courses in handicrafts (bookbinding, copperwork, mosaics) are offered in the upper grades, too, and artistic exercises are also continued (choral singing, instrumental music, painting, and sculpture in clay and stone).

The technical vocational training at the Hibernia School draws to a close with an examination piece, the journeyman's project, at the end of the 12th grade. Its production embraces the planning of the work, design and drawings according to standard procedures, calculations, and execution within a fixed time limit. It must always serve some useful purpose. In this final journeyman's examination the students act on their own responsibility, making independent use of the skills and knowledge they have gathered throughout the entire course. In the oral examination all students demonstrate that they can explain - alone or together with another student - what they have done, giving reasons for the methods used in their planning and execution.

The examination projects of the electricians are frequently the complete installation of a building, such as a house or, in one case, the stage-lighting for the school. The mechanics often help to meet the needs of their workshop with their projects by constructing a more complicated apparatus or tool.

One part of the training in metal - and electrical - work in the 11th grade is a 12 week period in a factory. While working in its various departments, the students are under the supervision of a workshop teacher who spends this time in the same factory for the purpose.

During the first few weeks each student works alongside an experience worker. Finding suitable workers and talking them into cooperating call for exact knowledge of the factory's set-up on the part of the supervising teacher. As far as their abilities allow, the students carry out their assignments themselves.

As a next step, the emphasis is shifted to teamwork, in which each student is assigned to a construction gang. The final phase is frequently spent in the production control department. Here instruments of measurement and other pieces of technical equipment are checked and repaired. This calls for frequent contact with the respective departments.

Such concrete working assignments provide the students with an understanding of the productional and organizational structure of the plant. These experiences establish at the same time a realistic basis for dealing with questions of industrial management later on. The problem of human dignity on the job becomes a burning question. The students have seen the unrelenting demands made by highly technical methods of production; but they have also run into the problems of hierarchy on the job and in the plant as a whole; the complex problems of workers' participation acquire vivid contour. When the students discuss economic theories and the perspectives of various world outlooks later on in theoretical lessons, it will be against the background of this basic experience. Thus here, too, the principle of basing thinking processes on actual practice is maintained.

The electrical workshop accepts orders for installation work, which is the type of work for which the 12th graders are being trained. Therefore they are encouraged to compete for contracts and submit estimates.

When an order has been received, it is discussed with the group which will carry it out, using blueprint data. They then frequently inspect the building site together with the architect and the owner. Making the acquaintance of these two people plays an important role in generating enthusiasm for the job. The group listens to conversations regarding special wishes and their costs; they see how compromises are worked out. Then the work schedule and the calculations are made; occasionally the time estimates turn out to be insufficient. When the actual installation of the building begins, the students find themselves wedged into a set of deadlines.

Indispensable to the various tasks are professional skill, drive and responsibility. The social structure of the group rests on these traits and on the degree of cooperation and readiness to correct mistakes within the group. If a student becomes ill, he will ask himself. "Can the others get along without me? Am I really too ill to go to work?" These are questions arising from the real situation. The students are right when they say, "On the building site the group becomes a genuine team."

For educational reasons the work is divided up. The workshop teacher must always retain the overview, but the 12th-graders who are capable of working independently are allocated jobs requiring a high degree of professional skill. They act as a sort of foreman for students of the 11th grade who are to learn from them. It should be pointed out that girls do the same work as boys, with no special considerations.

The tenants or the owner himself frequently show up suddenly and interrupt the installation work with special requests: sockets and lighting fixtures must be "transplanted", television and telephone connections changed and numerous other such wishes must be fulfilled before the walls can be finished. Nevertheless, all trainees must guarantee the reliability of their work. Nothing must be allowed to interfere with this. They must test their own work as severely as the authorities will when the whole installation is completed; this implies knowing and observing the relevant regulations.

Another aspect of this training period is the students' conversations with other workmen and women on the site, who treat the trainees as almost-equal partners in a common working situation.

As indicated, practical learning is supplemented by economic and industrial management theory. At the beginning questions of industrial management play a major role.

Class discussions show that the students have seen in their training periods in a large company how precisely all individual operations are calculated in piece-work. The concept of profitability emerges, for which the calculation of working time is important. The students discuss these relationships on the basis of their workshop experience in planning, calculating, execution and checking. The concept of alienation begins to take shape: the worker only makes a single part or perhaps carries out only a single manipulation in the whole process.

The problem of workers' participation in decision-making on the shop-floor arises. The students have concrete knowledge of this from their own experiences; but in the economics lesson it must be enlarged to include problems of co-decision in management. The firm in which the students do their training is taken as an example. Following this, the questions "What is capital?" and "What are its functions?" are discussed, leading up to a study of the firm's overall structure. This reveals the significance of capital ownership, generating the question as to the extent to which capital should be left to the owner's free disposal.

The main objective of economic studies is to raise to the level of conscious thought and analysis the impressions and experiences the students have gained during their many-sided practical work -- manual and machine work, division of labour and calculation. In addition, in grade 12 they are introduced to wider contexts, so as to obtain a certain overall understanding. For purposes of comparison, they are then taken to visit an industrial enterprise entirely different from the one they have already got to know.

When the experiences of the field-trip are evaluated in the last week of the 4-week economics block, it becomes clear that the students' "revolutionary" ideas are now founded upon their concrete observations and experiences, which exercise a corrective influence upon many an abstract or dogmatic notion.

Another such visit is paid to a factory in which workers' self-administration has been introduced. Such socially "progressive" companies are not necessarily noted for greater efficiency or happier workers. But the employees do display a greater interest in the whole operation and frequently have a detailed knowledge of its economic situation. The fact that reformist ideas are being put into practice in this company gives the students greater confidence in men's courage and initiative to enter upon new ventures. The opportunity of extracting primarily administrative or organizational information plays a secondary role by comparison. Conversations with socially aware manual and white collar workers about new social structures within a factory are fruitful and instructive for all concerned, in that the cognitive process that is immediately set in motion by every such encounter leads the students to develop practical ideals and the employees to discover new solutions to their problems. Since the Hibernia School, like all Waldorf schools, also practises self-administration, such talks can be regarded as an exchange of experience rather than simply as interviews between "theoreticians; and "practitioners".

4. SUMMARY AND CONCLUSIONS

More than two decades of Hibernia School experience have shown that practical vocational learning can be integrated with academic and artistic education to achieve a new educational quality. Such an educational concept leads to competence from both practical vocational and general social points of view. Competence, as used here, refers to professional and general qualifications that have been cultivated in such a way that they can be improved and transformed throughout life (lifelong learning). Graduates of the Hibernia School are rarely out of work; they are versatile enough to be able to adjust to changing situations with relative facility or even become active and realistic agents of such change. This may make itself evident in the sphere of operational procedures at work or in a willingness to assume social and political responsibility.

The following conclusions can be drawn from the material and experiences presented here:

1. Vocational education must be recognized as a valuable educational resource equal to general education and young people without this capacity have to be seen as only partially educated.

2. Only by including practical courses can realistic, constructively imaginative habits of thought and action be attained.

3. Practical subjects must be offered to all age-levels in a manner suited to their respective ages.

4. The system of continuing education (professional schools, institutions of higher learning, etc.) must be so organized as to facilitate alternating phases of study and practical professional experience (interval-learning).

5. The aim of education is the development of truly mature human being, who can, through his theoretical and practical competence, shape society and state in his own image.

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THE SRI LANKAN CASE STUDY

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

I. PROFILE OF THE CASE STUDY

The Sri Lankan case study highlights the achievements of the Sarvodaya non-governmental self-help organization in the field of vocational development. Predominant in the organization's training activities are non-formal programmes which are initiated by Sarvodaya workers in collaboration with volunteers from Sri Lankan villages. Sarvodaya runs programmes in more than 3,000 of the approximately 24,000 villages of the island.

Sarvodaya's central goal is "development from the village up". The Movement's action programmes are based on Buddhist philosophy; they incorporate the principles of Truth, Non-Violence and Self-Denial. In line with this philosophy Sarvodaya's approach to vocational development has to be regarded as a composite of individual and social development.

Sarvodaya's programmes for vocational development have to be viewed as supplementary to the prevocational and vocational courses of the Sri Lankan formal system of education. The country is in the process of establishing in its formal system a sequence of vocational development extending from primary school into post-secondary education. This sequence is initiated with prevocational curriculum units in the subject area of "Environmental Education" (awareness stage) in primary school and continues in the subject area of "Life Skills Education" (stages of systematization and experimentation) in lower secondary school. A differentiated programme at the stage of employability is then offered in the "Technical Subjects" of the upper secondary school. All programmes are intended to be activity-based and community-oriented.

Regarding non-formal programmes for training in the skilled occupations, the National Apprenticeship Board has organized an apprenticeship scheme for more than 150 categories of trade. Around 11,000 apprentices undergo training under this scheme (1984).

Table 1: Profile of the Sri Lankan Case Study

	Brief Overview of Characteristics
Theme of the Study	Analysis of curricula from a national system of non-formal vocational programmes of a non-governmental organization
Age Group Served	From 3-year olds to the elderly
Sponsor of the Programme	Sarvodaya is a non-governmental self-help organization funded by state and national and international voluntary contributions
Intention of the Programme	Emphasis on community development through vocational programmes which are deeply rooted in the informal sector
Specific Traits	Vocational development inseparably connected with individual and social development Perspective of development from the community up

2. STAGES OF VOCATIONAL DEVELOPMENT

In Sarvodaya's Shramadana camps children and adults, males and females, skilled and unskilled and even the disabled work together. Thus, different levels of vocational development are represented in a unified situation of learning and working.

Young children develop an awareness of the individual and social values of work through simple tasks such as assisting in carrying drinking water. While they work, children observe different kinds of skilled, semi-skilled and unskilled work. They learn basic work habits and become familiar with skills required to support community action.

Vocational awareness, experimentation and employability are fostered in a comprehensive and unified programme across the age levels and vocational development levels of the camp's participants. Of course these programmes apply only to the limited sector of the world of work which is essential in an agrarian Sri Lankan village.

The integrated development approach of these camps is carried over into Sarvodaya's long-term (six months or more) training programmes in agriculture, community shopkeeping and other fields. Participants are expected to have had experience of Shramadana camps, and attendance at the six-month agriculture course is a prerequisite for other long-term training provided by Sarvodaya. In line with the movement's emphasis on homogeneous development from the village up this course can be considered as basic vocational education.

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

Sarvodaya's approach of awakening Sri Lankan villagers to the need for development is pursued through the movement's non-formal training programmes. These programmes are deeply rooted in informal learning in settings such as the family gathering at work camps. A family gathering in a Shramadana camp may be attended by up to 300 people. On the other hand, the degree of classroom-type learning in Sarvodaya's development programmes is negligible. Learning occurs at the place of work. Hence, the environments of learning and working are identical.

The merits of this approach are not diminished by the fact that the limited resources available more or less impose this identity of environments for learning and working. Learning at the site where the qualifications to be obtained are needed can be expected to optimize learning motivation. It also ensures that only those skills are learnt which are actually needed at the workplace. Due to the unity of working, learning and even living together, vocational preparation through Sarvodaya's programmes is never restricted to mere skill training. In particular, the values of productive work for the individual, the community and the country at large are also concurrently transmitted, especially through the family gatherings.

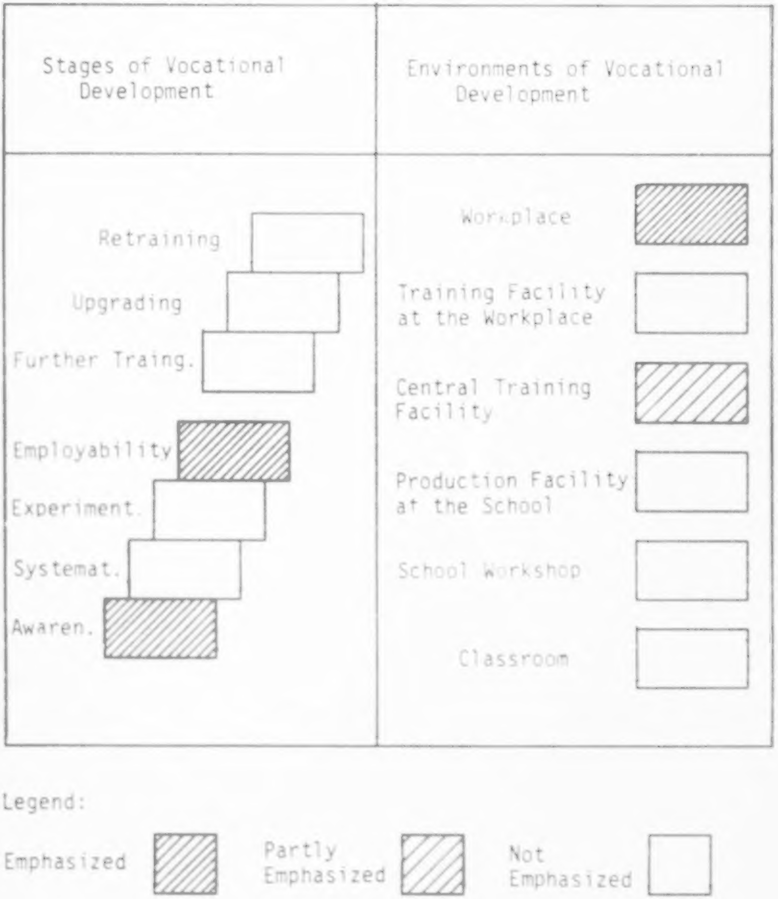
The Sri Lankan case study demonstrates that the unified situation of living, learning and working, the three main spheres of life, has the advantage over isolated learning environments such as classrooms that no additional preparation for coping in the work environment is needed (see Table 2).

4. DISTINCTIVE FEATURES OF THE CASE STUDY

A considerable proportion of the Sri Lankan population do not benefit from either the public formal or the non-formal programmes for vocational development. In many schools these programmes are not effectively taught, and participation in them tends to carry a low reputation. For a large number of Sri Lankans Sarvodaya's vocational development activities therefore constitute a second chance of education.

Sarvodaya does not attempt to offer a wide range of vocational programmes. In accordance with its concept of development from the village up, the programmes are based on actual needs. Social need is given preference over individual inclination.

It should also be noted that the Sarvodaya Movement does not rely on a staff of appointed instructors. Any individual possessing a skill is regarded as a potential instructor who should pass on this skill in an action-oriented approach.


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment.
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the Sri Lankan Case Study

This approach to lay teaching is similar to the design of "learning foundations", which were proposed as part of the attempt at de-schooling. The learner's unified situation of working and learning as described above is therefore parallelled by a unified situation of working and teaching from the perspective of the "teacher" or rather the "resource person".

In addition to this combination of working, teaching and learning in Sarvodaya's vocational development programmes positive attitudes towards productive work and in particular towards working together for the development of the villages are instilled in the informal learning situation of group events such as the family gatherings. Sarvodaya's programmes are thus based on the recognition that skill training in order to be successful should form a composite with attitudinal learning. Even in industrialized countries this fact is still being largely ignored. Especially in this respect Sarvodaya's experience may serve as a valuable orientation.

VOCATIONAL DEVELOPMENT THROUGH THE EDUCATION PROGRAMME OF THE SARVODAYA SHRAMADANA MOVEMENT IN SRI LANKA

by

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1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF SARVODAYA'S VOCATIONAL ACTIVITIES

1.1 Geographical, Historical and Demographic Situation

Sri Lanka is an island 65,610 square km in extent situated about 7° north of the Equator, a little below the southern tip of the Indian sub-continent. The central portion of the island is hilly, mostly above 2,000 metres high. The average temperature ranges from about 27° C in the coastal plains to about 15° C in the central highlands. The rainfall varies throughout the country, the "wet zone" receiving as much as 3,000 mm per year and the "dry zones" only about 800 mm.

Sri Lanka has a recorded history going back for more than 2,500 years. The single event of the greatest significance in its development right up to the present day was the introduction of Buddhism in the 3rd century B.C. The ruins of its ancient capitals with still extant examples of its art, architecture and sculpture bear witness to a high degree of cultural, social, political and technical development. In the context of the present study it is particularly relevant to mention the irrigation system of the ancient Sri Lankans. The intricate system of massive reservoirs with earthen dams and sluice-gates of stone and a vast network of irrigation channels which fed smaller reservoirs and finally the village fields are still a marvel to modern engineers. Even very recently when a site was selected for a dam, the excavation work unearthed the remains of a dam constructed several centuries ago on that very same site.

Historians are still trying to unravel the reasons which led to the demise of the ancient civilization. Being an island in the Indian Ocean in the path of the sea-routes of long ago, Sri Lanka had its share of "visitors". The Portuguese, the Dutch and the British colonized the island successively from the 16th to the middle of the 20th century. Of these it is only the British who had complete control over the island from the middle of the 19th century. In 1948 Sri Lanka became an independent Dominion within the British Commonwealth of Nations. It had a parliamentary system of government on the British model till 1978. Under a constitutional reform it is now called the Democratic Socialist Republic of Sri Lanka and has a President with executive powers. In future the President will be elected directly by the people and elections to the House of Parliament will be on a proportional representation basis.

As the following tables indicate, Sri Lanka is a multiracial, multi-lingual and multi-religious country:

Table 1: Population by Religion (1981 Census)

Religion	No.	Percentage
Buddhists	10,288,300	69,30
Hindus	2,297,800	15,50
Muslims	1,121,700	7,60
Christians	1,130,600	7,60
Others	8,300	0.10

Source: Statistical Abstract of the Democratic Socialist Republic of Sri Lanka - 1985, Tables 21 and 23

Table 2: Population by Race - 1981

Race	No.	Percentage
Sinhalese	10,979,600	74,00
Tamils	2,705,600	18.20
Ceylon Moors	1,046,900	7,10
Indian Moors	negligible	negligible
Burghers[+] and Eurasians	39,400	0,30
Malays	47,000	0,30
Others	28,400	0,20

Source: Statistical Abstract of the Democratic Socialist Republic of Sri Lanka - 1985, Tables 17 and 20

[+] Descendants of Dutch or Portuguese colonists.

1.2 Socio-Economic Structure

Sri Lanka has an agriculture-based economy, with tea being its main export. The other traditional exports are rubber and coconut products. The export of gems and spices is increasing in importance. Of the total export earnings tea accounts for more than a third and tea, rubber and coconut together account for more than half.

Rice, flour and sugar are among the major import items. These and other consumer goods account for about a third of the annual imports. The import of rice has been decreasing and is expected to cease very soon.

Among the major industries are cement, textiles, paper, ceramics, confectionery, beverages and tobacco. The country has its own petroleum refinery and factories for the production of tyres, chemicals, steel, sugar, condensed milk, fertilizer, plywood, leather goods, hardware items and flour.

The present government has embarked on a policy of free trade and has encouraged foreign investors to start industries by creating a free trade zone and offering various concessions and constitutional guarantees.

The provisional 1979 figure for the national per capita income is Rs 926,4 (approximately 60 US $). The following table gives some idea of the income distribution.

Table 3: Percentage of Income Receivers and Total Income Received per Month - 1981-82

Income (Rupees)	Percentage of Income Receivers	Percentage of Total Income
Less than Rs 100	3.0	0.2
Rs 100 to Rs 400	23.5	5.7
Rs 400 and above	73.5	94.1
	100.0	100.0

Source: Statistical Abstract of the Democratic Socialist Republic of Sri Lanka - 1980, Table 81.

For the purpose of the present study it will be useful to consider the employment profile of the country shown in Table 4 below:

Table 4: Employed Population Classified by Occupation and Sex - 1981 Census

Occupation (Major Groups)	Number (Thousands) Total	Males	Females	Percentage Total	Males	Females
Total employed	4,119.3	3,248.4	870.8	100.0	77.8	22.2
Professional, technical and related workers	246.4 33.7	130.3 30.4	116.1 3.3	5.98 0.01	4.01 0.01	13.33 0.00
Administrative and managerial workers	33.7	30.4	3.3	0.01	0.01	0.00
Clerical and related workers	257.4	199.4	58.1	6.24	6.13	6.67
Sales workers	315.7	291.6	24.1	7.66	8.98	2.76
Service workers	235.2	190.0	45.2	5.71	5.84	5.19
Agricultural, animal husbandry and forestry workers, fishermen, hunters	1.847.0	1.390.4	456.6	44.8	42.8	52.43
Production and related workers, transport equipment operators and labourers	1,090.1	948.2	141.8	26.46	29.19	16.28
Workers not classified by occupation	93.8	68.1	25.7	2.28	2.10	2.95

Source: Statistical Abstract of the Democratic Socialist Republic of Sri Lanka - 1985, Table 31

Several features are obvious from Table 4. There is a considerable disparity in the numbers of males and females employed. This disparity is smaller in the professional category. Agriculture-related employment accounts for nearly half the total.

Agriculture and production-related workers account for more than 75 per cent of the total. It should also be mentioned that, owing to the importance of non-economic factors, this conventional type of economic analysis of "employment" may not represent the true position in Sri Lanka. The need to earn "more and more" to satisfy increasing personal desires was not a part of the traditional culture. When a villager had enough to live on he did not strive for more. He saw no need for it and was quite happy and contented. To the conventional economist he was "unemployed" or "under-employed" or "inefficient", etc. However, the indications are that traditional culture may not survive the onslaught of a modern money-oriented economy particularly when it is backed up by a free trade policy.

It is also relevant to state that Sri Lanka has over the last few decades maintained an extensive system of national social welfare services. Health services are free, and so is education from the kindergarten to the 1st degree level at the University. Now text books are also distributed free within the school system. There is a system of scholarships and loans for those below certain income levels. The former subsidy for essential food items has now been replaced by a food-stamps scheme for those below certain incomes and guaranteed price schemes are in operation for various categories of primary produce. Subsidized fertilizer, and loans for agricultural purposes are also available.

The life expectancy at birth was 67.1 years for females and 64.1 for males (1971). In 1977 the maternal death rate was 1.0 per 1,000 and the infant mortality rate was 42.4 per 1,000.

1.3 The Formal Education System

The structure of the formal education system is illustrated in Figure 1. The school system, the colleges of education for teacher training, adult education centres and vocational technical units are the responsibility of the Ministry of Education, while the universities and technical colleges come within the purview of the Ministry of Higher Education. The Ministry of Youth Affairs and Employment is in charge of apprenticeship training. The Ministry of Educational Services has the responsibility of supplying schools with furniture and equipment and is also in charge of school buildings.

As the following table indicates, many of the junior secondary and senior secondary schools have lower grades as well.

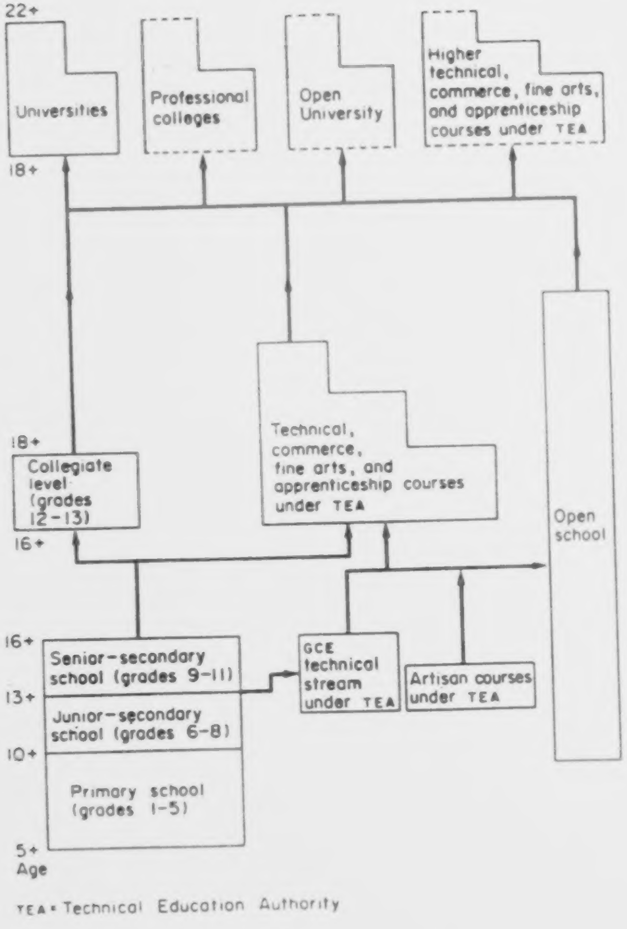
Table 5: Schools according to Grades (1982)

	Grades	No. of Schools
Primary	Kindergarten - 5	4,007
Primary and Junior Secondary	Kindergarten - 10	3,750
Primary and Junior Secondary and Senior Secondary	Kindergarten - 12	1,415
Junior Secondary and Senior Secondary	6 - 12	372
Total		9,544

The total enrolment in 1982 was 3,398,055, of which 49.7 % were females.

University education has expanded very rapidly. There are now seven fully-fledged universities, one open university, one private medical college and several other institutions of higher education. The number of internal students is about 20,000. There are also 23 technical institutes, of which 22 are under the Ministry of Higher Education.

In addition to the institutions referred to above, which constitute the major portion of the formal education system, some others need to be mentioned. The ministries in charge of health, agriculture, power and labour have their own institutional facilities for various types of training. There is also a system of "Pirivena" Education which is centred around Buddhist temples but is not confined to religious instruction nor to Buddhist monks or Buddhists. There are 348 Pirivenas in the country with 15,556 Bhikku (prospective monks) and 15,049 lay pupils. They receive a grant to defray teacher costs.


22+
Universities
Professional colleges
Open University
Higher technical, commerce, fine arts, and apprenticeship courses under TEA
18+
18+
Collegiate level (grades 12-13)
16+
Technical, commerce, fine arts, and apprenticeship courses under TEA
Open school
16+
Senior-secondary school (grades 9-11)
13+
Junior-secondary school (grades 6-8)
10+
Primary school (grades 1-5)
5+
Age
GCE technical stream under TEA
Artisan courses under TEA
TEA = Technical Education Authority

Source: Husên T., Postlethwaite, T.N. (eds.) *International Encyclopedia of Education*. Oxford, UK: Pergamon, 1985, p. 4780.

Figure 1: Structure of the Education System

In the schools, technical colleges, polytechnics, teachers' colleges and Pirivenas the medium of instruction is either Sinhala or Tamil, the two national languages. By law the government has to provide instruction to children within the school system in their mother tongue, except in certain specialized institutes and courses where the medium is English. English is taught as a compulsory second language from the primary school upwards. Those who enter the universities are generally provided with further instruction in English.

In view of the objectives of the research study for which this report is being written, the further description of the education system will relate to vocational education. The school curricula of the primary and secondary schools contain a limited amount of material related to vocations, especially in areas such as social studies. The pupils are also likely to learn something about vocations in other areas such as science, mathematics and language. But all this is seen as a part of general education and is not specifically intended to create "Vocational Awareness", the first stage in vocational development. From grade 6 pupils have to study one technical subject. They may choose agriculture, ceramics, sewing, masonry, woodwork, metalwork, weaving, home economics, and home gardening. These studies are continued in grades 9 and 10. Three other areas are available at this level: radio mechanics, motor mechanics and fisheries. Whether a particular subject is available or not depends on the location of the school and on its facilities. The choice is a very limited one. A study of the syllabuses of these areas indicates that they do not have the broad objectives or the philosophical basis of the "pre-vocational studies" which they have replaced. Pre-vocational studies, which were an integral part of the school curriculum from 1972 to around 1977, may definitely be considered to have made a deliberate attempt to develop the stage of "Awareness" as defined in the programme documents (Perera 1973, cf. Ministry of Education 1978 and 1979).

To the majority of school-age children, the harsh world of work is very much a part of their lives. In the rural areas, where roughly 75 per cent of the population live, the children generally assist their elders during the periods when there is a lot of work to be done in the fields. The Ministry of Education has, therefore, given permission to schools in different parts of the country to adjust their school calendar so that children may give such help without detriment to their school work. The practice of children assisting in the family's work is partly a cultural tradition and partly a matter of dire necessity. The latter applies also, and to an even higher degree, to the urban poor whose occupations are not the wholesome traditional ones but the usual unskilled labour of the disadvantaged.

Coming back to a consideration of the formal education system, the institutions and organizations referred to above provide a variety of vocational training. However, to the large majority of Sri Lankan youth "career options" and "experimentation" are only theoretical concepts. Competition for training which leads to the prestigious jobs is very keen.

1.4 Non-formal Education Programmes

There is a considerable variety of non-formal education programmes conducted by various ministries including the Ministry of Education, and several non-governmental organizations. The Education Ministry's programmes cater mainly to out-of-school children, mostly to those who have just left school. Existing school facilities are used outside the regular school hours to organize the following programmes:

- Skill development programme for school leavers
- Literacy programmes for non-school-goers and primary school drop-outs
- Adult education community education programmes
- English classes for adults.

Among the non-governmental organizations providing non-formal education programmes, the Sarvodaya Movement is the largest. Its clientele includes not only teenagers, young adults and older people, but also children of school-going age as well as pre-school children.

1.5 Informal Learning

Religion occupies an important place in Sri Lankan life and places of religious worship play a very significant role in informal learning. The Buddhist temples in particular have throughout the ages been regarded as not only places of worship but places of learning as well.

The extensive mass media coverage of the whole country provides another resource for informal learning. For more than half a century Sri Lanka has had national newspapers in the national languages. At present there are six daily papers in Sinhala, three in Tamil and four in English, in addition to numerous journals published in both Sinhala and Tamil. Radio and TV now cover the whole country and the number of TV sets in the country is now estimated at around 500,000.

Due to strong family bonds the family and the community are rich sources of informal learning. This is particularly so in the rural areas.

2. NON-FORMAL EDUCATION PROGRAMMES OF THE SARVODAYA MOVEMENT

As stated earlier, the Sarvodaya Movement is the largest of the non-governmental agencies in Sri Lanka engaged in educational work. Sarvodaya educational programmes, catering as they do to the very young as well as to the old, both complement and supplement the formal education programmes.

2.1 Historical Development

The Sarvodaya Movement had its birth in 1958 when the founder of the Movement, A.T. Ariyaratne, organized a "shramadana" (work sharing) camp in a village in which "low-caste" people lived. The "shramadana" camp involved living in the village, working with the villagers and interacting with them in a spirit of true equality. Accompanying Ariyaratne, who was a science teacher at that time, were a select band of his senior pupils and some of his friends and colleagues. Ariyaratne's goal was not so much community development as rather the provision of a rich learning experience for his pupils whose very academic curriculum taught them very little of their country and in addition impoverished their personalities instead of developing them. The first camp was such a satisfying experience to all concerned that more such camps followed in various parts of the country. Other schools and groups became interested, and the Movement grew.

The expansion of the Movement necessitated more organized and systematic work and led to the creation of the Lanka Jathika Sarvodaya Shramadana Sangamaya. In 1972 the Sangamaya was incorporated by Act No. 16 of the Government of Sri Lanka. It is now working in more than 3,200 of the approximately 24,000 villages in the country. Its aims, of which educational development is a vital component, are described in the following extract:

"The word Sarvodaya literally means the awakening of all

> in society. It also means the harnessing of the goodness of all for the awakening or the liberation of all. The Sarvodaya Movement recognizes the oneness of all mankind and thus attempts to transcend all man-made barriers of caste, colour, race, religion and nationality in the realization of its aims and objectives.
>
> Truth, Non-Violence and Self-Denial are the principles on which the whole philosophy of Sarvodaya is based. The Sarvodaya philosophy in Sri Lanka was mainly inspired by the teaching of Lord Buddha and the non-violent struggle of Mahatma Gandhi and Acharya Vinoba Bhave in India.
>
> The Movement aims at (i) the liberation of the individual both from his inner defilements of greed, hatred and ignorance and outer oppressive elements that have enslaved him, (ii) the liberation of the rural and urban communities from poverty, ill health, ignorance and dependency resulting from conditions existing within the communities as well as the economic and political exploitation carried out by the outside agencies, (iii) liberating national communities from bureaucratic, economic and political exploitation and subjugation on one hand and from colonialism, imperialism and the like on the other hand and (iv) the liberation of the world Human Family from distrust, enmity, hatred, wars and all the ills such as environmental pollution, and attendant handicaps on technological advancement."(Ariyaratne 1980a, p. 10)

2.2 Legal Framework and Organizational Structure

The activities of the Sangamaya are regulated by the before-mentioned Act No. 16 of 1972. The Sangamaya has its own constitution, the manner of amending it being laid down by the Act. Under its constitution its affairs are managed by an Executive Committee which is elected annually. The Sangamaya is independent of State control.

The organizational structure of the Sangamaya has been changing over the years so as to best serve a growing Movement. From a highly centralized structure in the early years it is moving towards a highly decentralized one. The final goal is cessation of financial and administrative control over the peripheral units. The following is a description of the present organizational structure.

2.2.1 *National level.* At the national level there is an executive committee of 57 members elected by the general membership at their annual general meeting. There is constitutional provision for inviting other persons to serve on the committee. Such invitees participate in the deliberations but do not have the right to vote. This permits people with specialized knowledge and experience to be brought into the committee. The executive committee includes an Elders' Council also elected at the annual general meeting. All decisions of the executive committee are by consensus. Where an issue cannot wait for the monthly meeting, a decision is taken by the committee of officers, which meets once a week. A daily administration board has been constituted comprising the executive vice-president, other senior officials and senior workers at the headquarters.

The headquarters consists of about 30 sections grouped under 8 main divisions as follows:

- Self-managing units - e.g. the Sarvodaya Research Institute. For all practical purposes it is an independent institute although legally it is still subject to the decisions of the Executive Committee.
- Development Education Institute
- Production Units e.g. Metalwork, Woodwork
- Service Enterprises e.g. Printing Press
- Special Developmental Services e.g. Rural Technical Services, Community Shops
- Planning Division
- Financial Administration
- General Administration

The main functions of the Development Education Institute are to train the field staff of the Movement at the District and Gramodaya centre levels, to design various educational courses and to prepare material for use by the field staff in their educational work. In addition to these the Development Education Institute itself conducts various courses for a variety of people ranging from high-level government officers to rural village folk as well as foreigners. These courses are designed and conducted on request to meet the specific needs of the groups concerned.

2.2.2 *District level.* Sri Lanka is divided into 24 districts for state administrative purposes. By and large the Sangamaya follows these divisions, but some of the larger districts have been split into smaller ones for Sarvodaya work, and some of the Sarvodaya districts cut across the state district boundaries. At present the Sangamaya has 28 "district" centres. A co-ordinator is in charge of each district. He is appointed by the Officers' Committee. In general a district centre has the following organizational structure:

- Development Education Section
- Shramadana Section
- Children's Services Section (includes health and nutrition)
- Gramodaya Services Section
- Projects Section.

The bigger and older district centres usually have production and service units and a transport unit. For the general administration and accounting work, no special staff is provided except for an occasional accounts clerk. The total staff of all these district centres is about 500. (Ariyaratne 1981, p.77)

Control exercised by the headquarters over the district co-ordinators consists mainly of budget discussions held about once a quarter. Once the budget has been approved, the district co-ordinators are free to implement the programmes without any further reference to headquarters. They are also permitted to transfer allocations across budget items within the total allocation. Some of the districts earn about 40 per cent of their budget and many are able to utilize the resources of other agencies, mainly those of the state. The districts are being encouraged to establish their own auditing and other financial management procedures so that in course of time the headquarters will cease to execute such functions.

The district educational work is mainly concerned with village level groups. The training of village youth for community development work and the training of pre-school teachers for village pre-schools occupy an important place. Vocational training courses which require specialized work-places and tools are also conducted, mostly at district level. Many of the districts now have such facilities for training.

2.2.3 *Gramodaya centre level*. A consequence of the growth of the Movement was the establishment of centres to serve villages. A Gramodaya centre serves from about 20 to 40 villages. It is the growth of such centres which led to the development of district centres. In general the Gramodaya centres are structured along the same lines as the district centres. Some of them may not have a separate section for projects. There is very little administrative work, and the accounting work is handled by the districts. At present (1981) there are 158 Gramodaya centres with a staff of 697 servicing 3,272 villages (Ariyaratne 1981). Gramodaya Centres are directed by their respective districts.

At the Gramodaya level the type of educational work varies greatly, mainly on account of very uneven facilities. Some Gramodaya centres have the capacity to conduct pre-school and community development courses. Others, which engage in some economic activity, conduct vocational courses of an apprenticeship nature. There are also some which provide a meeting place where different groups may have discussions with either government officers, such as public health nurses, midwives, cultivation officers, or local people with expertise in such areas as traditional medicine, or trained Sarvodaya field workers.

2.2.4 *Village level*.At the village level the Sangamaya has no administrative or financial control and no employees. What operates at that level is the base of the Movement consisting of people who voluntarily accept the Sarvodaya development philosophy. The Sangamaya services the village level in the following manner:

- it organizes development education programmes within and outside the village. These are essentially non-formal and informal programmes designed for a variety of purposes, but in particular for training village youth for development work within their community;
- it organizes and stimulates action programmes within the village designed to meet basic human needs which have been identified by the community;
- it provides limited financial and material support for

action programmes such as an allowance to the pre-school teacher to cover certain costs, the loan of tools for construction work on the village, or the guaranteeing of a bank loan;

- it provides community development literature written specially for the village;
- it develops the psycho-social infrastructure such as children's groups, mothers' groups and youth groups, who will speak for the village and direct its development;
- it assists the village in obtaining resources from outside, particularly from the State.

The educational work done at the village level is centred mainly around the pre-school, which serves either trained Sarvodaya community health workers or those from the government as an entry point where they can meet village mothers and provide needed instruction and guidance. At the villagers' request, classes in first aid, environmental conservation, home gardening etc. can be organized, depending on the availability of competent volunteers.

In the 3,272 villages served by the Sangamaya there were in 1981 2,444 pre-schools managed by 4,427 teachers chosen by their respective villages. Of these teachers 2,118 were serving on a completely voluntary basis with no allowance at all from the Sangamaya. Its contribution has been to train them. Others are paid a monthly allowance of approximately 6 US $, which is not a living wage. However, at the village level this is the only type of worker who receives even such an allowance. Others in the village, particularly young people, may engage in various activities depending on their resources and commitment. Some for example receive an elementary training in first aid and provide a free "rural medical service". These are all participants in the Movement. The village level Movement is expected to spill over the village boundaries and operate at Gramodaya, district and finally at national level. The organizational structure of the Sangamaya evolves with this in view.

3. VOCATIONAL DEVELOPMENT IN THE CONTEXT OF INDIVIDUAL AND SOCIAL DEVELOPMENT AS CONCEIVED BY SARVODAYA

3.1 The Concept of Development Indicating the Relation between Individual and Social Development and its Vocational Implications

The Sarvodaya concept of development is people-oriented. It is the development of people in all parts of the world, whatever their colour, race, language or religion that Sarvodaya strives to achieve. Development of people must satisfy three conditions, as follows:

- development should lead to *desirable* growth (Development is not *value*-free. There should be a value framework which is capable of being used by *anyone* anywhere in the world.)
- development should be *comprehensive* (Development should not be restricted to a few aspects. It should include the spiritual, moral, cultural, social, political and economics development of people.)
- development should be *balanced* (Action programmes should not concentrate on one of the above aspects to the exclusion of the others. To be successful, development has to take place on several fronts simultaneously. Programmes designed to develop each aspect separately have so far failed.)

Sarvodaya has good reasons to believe that the value-framework it advocates is acceptable to people of all faiths and religions, to theists and atheists alike in spite of its being based on Buddhist philosophy. In the context of this study Sarvodaya's four principles of individual development and four principles of social development are of special importance. A brief description of these is given below.

3.1.1 *Four principles of individual development.* Sarvodaya philosophy refers to the awakening of an individual, which may be approximated in more common terminology to the development of the personality. "Awakening" is the term Sarvodaya prefers to use on account of the connotation of an effort by the self to awaken. Others may help but essentially one has to awaken by oneself. The *first principle* to follow is to cultivate a respect for all life, not only human but animal and plant life as well. This implies a development in the affective domain where one develops a love and affection not only for oneself, one's family and one's friends, but for all people all over the world. This is necessary if one set of people is to stop exploiting another in various ways as happens at present. One's personality is developed to the extent one cultivates such feelings. The *second principle* is to take some actions which arise from such feelings. Sarvodaya would designate these *compassionate actions*. Sharing one's labour, knowledge, skills and wealth with others is a compassionate action. A village youth with his home-made medicine box rendering free first aid is engaging in a compassionate action. The *third principle* to follow is to ensure that one's motivation for such actions is not the desire for personal gratification or material gain or glory but the dispassionate joy one derives from simply doing something good. The *fourth principle* is to cultivate a sense of equanimity so that one is not unduly affected by the results of one's compassionate actions, be they fame or blame, loss or gain, success or failure. Personal development has occurred to the extent that one tries to live according to these principles.

3.1.2 *Four principles of social development.* Every human being, except those who have renounced social life to live alone away from other human beings, is a member of various groups, be they family, friends, workmates or others. Hence, in addition to the principles of individual development the principles of social development have also to be followed. The *first principle* is *sharing.* This is not understood in the narrow sense of sharing material wealth but in the very broad sense of sharing one's time, thought and energy. Making a contribution to a charitable cause is, by itself, not genuine sharing. There should be a degree of personal involvement, a genuine giving-away of oneself. The relation of this principle to the first two principles of individual development will be obvious. The *second principle* of social development is *pleasant speech.* Social development occurs in a group to the extent that group members communicate with each other not acrimoniously but pleasantly. People should mean what they say and should say it in a manner which maintains group harmony. The first principle of individual development is very relevant here. Love for another person should prevent one from harsh speech or saying something which would bring that person into disrepute or cause him some annoyance or harm. In times of stress particularly this principle should govern one's conduct in a group. The *third principle* for social development is that the group should engage only in *constructive action*. Constructive action favours the cohesion of the entire community. It is action which everyone can support if not actively engage in. Weeding the rice fields or building a school are constructive actions. Brewing illicit liquor is not a constructive action. The *fourth* and final *principle* for social development is *equality*. This is equality in the sense of basic human rights and freedoms. It is not to be narrowly interpreted as "dividing" everything equally in numerical proportion. It is not against equality to respect "age" and "wisdom".

3.1.3 *Practical action programmes at community level as part of individual and social development*. To understand the vocational development as conceived by Sarvodaya it is necessary to learn something about the practical action programmes at community level. The major community development technique used by Sarvodaya is "Shramadana". Shramadana means the voluntary sharing of one's time, thought and energy for the wellbeing of all. From this formulation the very intimate relationship of Shramadana with the principles of individual and social development should be very obvious. In practical terms "Shramadana" manifests itself as a village level activity planned and executed very largely by the community itself. Those who are willing to "share their time, thought and energy for the wellbeing of all" gather at a particular place for a specified time during which they engage in "constructive action"; use "pleasant speech"; ignore distinctions of caste, creed, position, power, etc.; share whatever food is available, share their knowledge with each other in solving, then and there, the practical problems which invariably arise. The constructive action may be weeding a paddy field, building a pre-school, building a house for the neediest in the village, repairing the walls of the village reservoir, cleaning the temple premises, etc. The place in which "Shramadana" is done and the time spent on it depend on the nature of the constructive action. Occasionally several villages participate in a Shramadana camp, which may extend for as long as three months, and the total number of participants may well be over a thousand. Different village groups take turns in working in such camps. The following extract indicates the potential of Shramadana for personal and social development:

> "Shramadana is a process which, when carried out at the grass-roots level, can lay an excellent psychological infrastructure, to trigger off a total development process in accordance with the foregoing concepts, principles, and values. Some of the important characteristics that stand out in the Shramadana process are:
>
> - bringing together a good proportion of the total village population to think together about their problems, decide on priorities of physical infrastructural work that could be carried out during the Shramadana camp, and the techniques they could use to implement such a programme;
> - enabling a village leadership, especially groups of young people under the guidance of understanding elders in the village, to undertake the responsibility of planning the organization of the Shramadana camp and soliciting the co-operation of government extension services and other sources that could be of help;
> - satisfying one or more basic human needs to which the community has given priority, e.g. the construction of an access road to the village, a tank system to store water, or an irrigation canal to carry water to their paddy fields;
> - integrating dormant moral, cultural, spiritual and participatory processes inherent in the tradition of the village community with the socio-economic development processes;
> - awakening the village community to realize the vast potential they have for self-development based on self-reliance, mutual co-operation and harnessing of available local resources and
> - generating a self-realization process to understand the real causes of their social and economic backwardness through their regular meetings called 'Family Gatherings' which are held twice a day." (Ariyaratne 1980b, p.17)

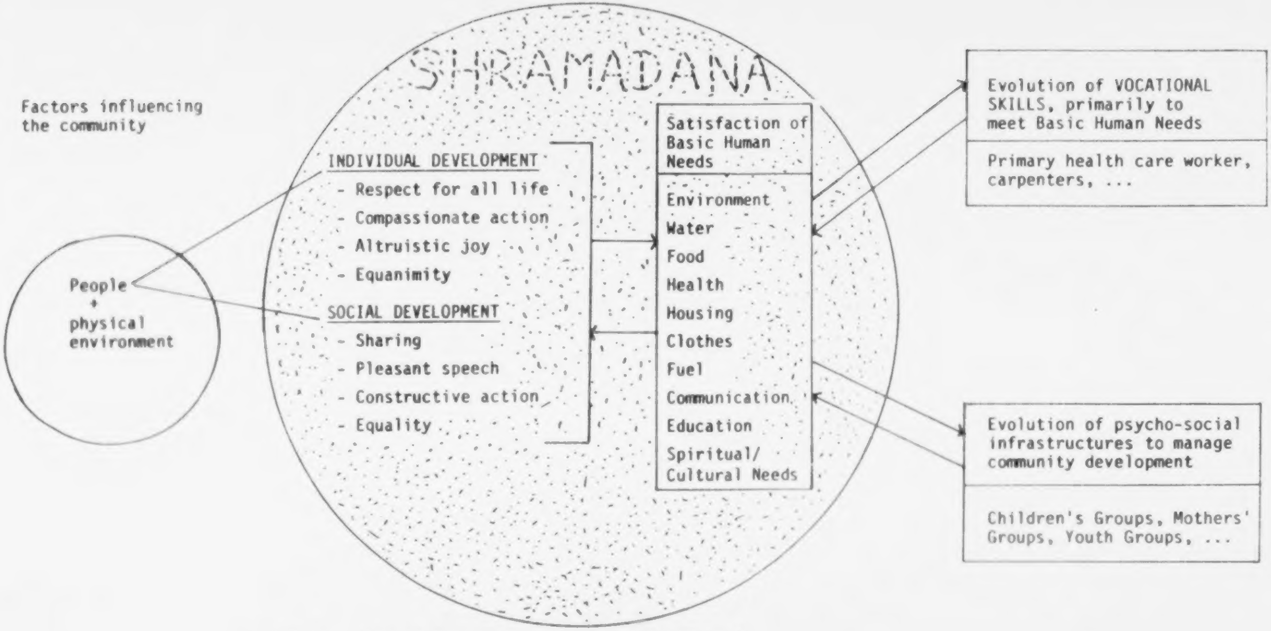
3.1.4. *Vocational development.* It will have been observed that the principles for individual and social development involve "action" both individual and collective. Such action must result in a desirable output. In the Sarvodaya development philosophy and hence in its vocational activities, the major desirable output is the satisfaction of basic human needs. The following basic needs have been identified by the people themselves:

- A clean and beautiful environment
- A clean and adequate supply of water
- A minimum of clothing requirements
- An adequate supply of food
- Basic health care
- A modest house
- Energy requirements
- Basic communication
- Total education
- Spiritual and cultural needs.

Satisfaction of these basic needs does not require the services of highly qualified experts. To build a modest house, for instance, it is not necessary to employ engineers and architects capable of constructing multistoried buildings, factories, bridges, etc. All that is required is that the village community should have carpenters and masons who can build a house which fits the environment, which can be constructed with the available material and can be maintained by the villager. Similarly, basic health care at the village level requires health care workers familiar with hygiene and simple nursing tasks, not specialists who are competent to treat the diseases of affluence. Sarvodaya believes, therefore, that the country's resources should be re-distributed so as to permit the emergence of a spectrum of vocational skills which are in the first instance relevant to village life. Figure 2 indicates the relation between individual, social and vocational development as conceived by Sarvodaya. It is an adaptation from the manual for a Sarvodaya training course.

3.2 The Objectives and Content of Development Education in Relation to the Different Stages of the Life Cycle

3.2.1 *The objectives of development education.* Development education is a living concept. It derives its life-energy from the lives, thoughts and actions of the people at large. On the one hand they determine it. On the other hand it shapes their thinking.


SHRAMADANA
Factors influencing the community
People + physical environment
INDIVIDUAL DEVELOPMENT
- Respect for all life
- Compassionate action
- Altruistic joy
- Equanimity
SOCIAL DEVELOPMENT
- Sharing
- Pleasant speech
- Constructive action
- Equality
Satisfaction of Basic Human Needs
Environment
Water
Food
Health
Housing
Clothes
Fuel
Communication
Education
Spiritual/ Cultural Needs
Evolution of VOCATIONAL SKILLS, primarily to meet Basic Human Needs
Primary health care worker, carpenters, ...
Evolution of psycho-social infrastructures to manage community development
Children's Groups, Mothers' Groups, Youth Groups, ...

Source: Adapted from a Sarvodaya Training Manual

Figure 2: The Sarvodaya Concept of Development Indicating the Relation between Individual and Social Development and Its Vocational Implications

The current global objectives of Sarvodaya development education have already been presented in sub-section 3.1. They have as their basis what development means to the ordinary men, women and children in the villages, and are translated into action in development education programmes, of which the Shramadana camps are an example of particular relevance to vocational development.

The leadership of the Movement has formulated the objectives of these programmes as follows:

- "to satisfy the needs of individuals and groups by providing opportunities for them
- to build awareness of their problems and uncover potentialities to solve them,
- to develop community leadership skills,
- to develop skills and organizational patterns of economic usefulness,
- to facilitate planning of programmes and finding of resources and
- to co-ordinate all self-development programmes into a coherent whole."(Ariyaratne 1972)

In terms of content, development education has no boundaries. Its methodologies are diverse. The physical infrastructures and other resources are whatever is available. The participants in development education are called "Sarva", which means all. For the individual, development education is a process which spans the period from birth to death and even beyond for those who believe in rebirth. The life-span of an individual may be used to analyse the concept of development education further. Table 6 presents such an attempt.

It should be emphasized that Table 6 is not a comprehensive list of contents. It is only a sample to indicate the range and variety.

3.3 The Process of Development Education

The term "processes" is here used very broadly to include what is generally considered under such terms as methods, strategies and techniques. It includes a considerable range of interactions between people particularly in non-formal and informal settings.

The very life of a Sarvodaya worker and life as it is lived in a Sarvodaya institution are part of the processes of development education. To have thoughts of loving kindness to all people, to bear no ill-will or hatred to others, to talk pleasantly to other people, to treat others on a basis of equality must of necessity affect educational interactions stimulated, initiated or otherwise brought into being by a Sarvodaya worker. This is not to imply that every Sarvodaya worker has a fully developed personality in accordance with the Sarvodaya philosophy. But the effort to practise it made by Sarvodaya workers is very significant.

A large part of the programmes for village mothers takes place in informal settings and uses informal processes. A trained community health worker may meet a number of women near the village well, the common bathing place in the village, and a short discussion may ensue which will very likely benefit both parties. Or such a meeting may lead to fixing a date and venue for a meeting of the mothers' group. Or the community health worker may use the opportunity to inform the mothers of the next visit of the public health nurse. Meetings may take place under a shady tree, in the village school or pre-school, in the village temple or in someone's house or compound. The trained worker and others in the village who assist her will pay house to house visits. Being from the village or an adjoining village, she is generally welcome in the houses. This is "individualized attention" in the participants' own home environment. Besides visiting health clinics and maternity homes, the mothers may, along with others in the village or by themselves, visit a Gramodaya or district centre and other places of interest. At a Gramodaya or district centre a special programme fitting the size, composition and length of stay of the group is usually drawn up. It may include a short lecture, discussions, a film show, a possibility of listening to recorded speeches and, invariably, participation in a family gathering. Specially prepared literature on development themes will also be distributed.

A family gathering is an event in which everyone on the premises participates. It may last from half an hour to well over an hour. The venue may be indoors or outdoors. In Sarvodaya institutions, family gatherings are often held three times a day, one early in the morning, one after the noon break and one in the evening.

If one particular process or technique can be identified with development education it is Shramadana. This has already been briefly described in Sub-section 3.1.3. Participation in one or more residential Shramadana camps is an essential requirement for any Sarvodaya training course, whatever the main emphasis of the course may be. Shramadana is not a training procedure as such. Its importance derives from several characteristics; it can be planned and executed by the people with whatever resources they have at their command. All aspects connected with Shramadana, such as the work to be done, the duration, the work force required, the tools and techniques to be used, the food to be consumed, etc. are decided by the participants. It has the potential to liberate the 'good' in humans, and it can convince the people of their social, political, moral and even economic power.

The more formal programmes of development education make use of all the usual methods and procedures such as lectures, discussions, group work, study visits, field work, individual assignments, etc., with the one proviso that these procedures are not the only ones used. Being in residence in a Sarvodaya centre is an essential requirement. Whatever the nature and type of the course, all participants are expected to join in the general life and work of the centre, which includes the routine maintenance work. For example, participants are frequently called upon to help in the cooking. Sweeping the floor and cleaning the toilets are invariably among the work to be done by the participants, as well as by the regular staff of the centre.

For the purpose of the present study some of the common procedures employed in vocational training may need to be described. The traditional apprenticeship under skilled workers is widely used; though Sarvodaya vocational training programmes are not for certification purposes. Employability is the main goal. Trainees are not enrolled unless there is some possibility that the acquired skills can be utilized. Master craftsmen are, therefore, rarely recruited specifically for training purposes. They are employed only if there is actual production work to be done. For example, a rural housing scheme requires the services of several skilled masons. But only a few will be recruited, and some of the members of the youth groups in the area who are interested in pursuing such a vocation will be attached to them. By the time the housing scheme is completed some of the youths have acquired a fair degree of competence.

Apprenticeship to master craftsmen is not the only training received by the young people selected. They will also follow one or more courses at a Sarvodaya centre on general community development, participate in Shradama camps, learn some simple book-keeping, etc.

Furthermore, Sarvodaya has institutional and other facilities to conduct the kind of formal vocational course generally available in middle level skill training institutes, not of course across the whole spectrum, but in selected areas such as carpentry, metalwork, agriculture and motor mechanics. But all courses are governed by the Sarvodaya philosophy.

Table 6: Samples of Content of Development Education Programmes for Different Stages of the Life Cycle

Conception - Birth	0 - 2.1/2 years	2.1/2 - 5 years	5 - 15 years	15 - 35 years	35 years -
(Programmes for Pregnant Mothers)	(Programmes for Lactating Mothers)	(Programmes for Young Childern)	(Programmes for Older Children)	(Programmes for Youth and Young Adults)	(Programmes for Adults)
- Responsibilities of a wife	- Personal hygiene and care of infant	- Health habits	- Health habits	- Concept of development	- Concept of development
- Personal hygiene	- Need to breast-feed	- Simple household work	- Household work	- Evolution of the village	- Village economy and production
- Nutritional needs	- Nutritional needs of the mother	- Home gardening	- Home gardening	- Factors influencing village, country	- Village organizations
- Need to cultivate good thoughts	- Physical and psychological growth of the infant	- Songs	- Children's fair	- Shramadana	- State services for the villag
- Physiological changes	- Minor ailments of the infant and local remedies	- Dances	- Saving schemes	- Gathering data about village	- Laws affecting village organizations
- State health services - Midwife - Clinics - Maternity homes - Supplementary feeding programmes	- State health services	- Stories	- Religious and other cultural studies	- Primary health care	- Constitution fo village society - Roles of Children's Group, Mother Group, Youth Group and Elders' Grou
- Local remedies and practices	- Weaning the baby	- Creative activities	- Primary health care (older children)	- Religious and other cultural activities	
		- Traditional religious and cultural practices	- The Children's Group	- Vocational training	
				- State development programmes	

4. THE PROGRAMME OF VOCATIONAL DEVELOPMENT IN RELATION TO THE LIFE SPAN AND WITHIN THE LIFE SPACE

4.1 Brief Description of General Programmes and Participants

It might be inferred from Table 6 that vocational training programmes as such are provided only for the 15 - 35 age range. In the context of this seven-country-study, however, where the development stages of awareness, systematization, experimentation and employability are investigated, it is necessary to refer to other programmes as well.

In a Shramadana camp different types of skilled, semi-skilled and unskilled work are carried out. It is a characteristic of most of these camps that children as well as adults, males as well as females and even the disabled and the elderly participate in this work. A certain routine has developed. Work starts and ends at very definite times. Before it starts, generally during the previous evening, there is a "family gathering" devoted to, among other things, safety in working with tools. Correct care and use of tools, and the need for precautions to ensure the safety of the worker himself and of others are emphasized. The camp has a tool store from which tools are issued and to which they have to be returned. Though it is the young people who are mostly concerned with the use of tools, children and others are also present in the family gathering. In the actual work children may in fact carry the tools as part of their contribution. They observe the adults at work and assist them in various ways. They may listen to a skilled person explaining to a learner how a particular tool should be used or which is the appropriate tool for the job in hand. A Shramadana camp is thus a value-oriented work environment in which children are encouraged to be present except when it is not safe for them.

In a Shramadana camp, children also "work" though not in a strict vocational sense. But in a real sense they do contribute. Some of the very young may carry drinking water to the workers. The older ones may assist in the lighter work. Some may help in the kitchen, others in marking the camp attendance. Thus participation in the work of a Shramadana camp is very wide. There is no selection of people for a camp. All who observe the camp discipline are welcome.

As shown in Table 6, the development education programmes for 5 - 15 year old children include such contents as children's fairs, saving schemes and basic health care. In Sri Lanka the majority of this age-group are in the formal school system. The Sarvodaya programmes for this age-group are therefore mainly out-of-school programmes and attendance is entirely voluntary. Trained community development workers organize children's groups in the communities. These groups engage in a variety of activities. Organizing regular fairs where they sell the produce from their home gardens is one such activity. The fair is run by the children with some guidance from trained community workers and other adults. Children's groups may organize a play, a study tour, etc. There are no specific syllabuses or training programmes for such activities.

For the older children and those in the youth group range (the ages are fixed arbitrarily and are flexible) there are definite syllabuses and training programmes in such areas as the following: first aid (Western), local medicines for minor ailments, first aid for serpent bites, national and regional state services, vigilance activities, environmental conservation, etc. While the syllabuses are centrally prepared, the instruction is given by local people recruited from the area.

Apart from the vocational programmes proper, there is a definite "Health Care" training programme for the youth groups, which includes instruction in clinics and hospitals. The objective of the training is to enable the young people to render some very basic health care to the community, e.g. dressing a wound. All of these programmes are dependent on the availability of voluntary instructors, many of whom are state employees.

4.2 Vocational Training Programmes for Youth

4.2.1 *Planning and implementation of programmes*

The planning and implementation of vocational training programmes is essentially a function of the field staff who are made aware of the needs through the network of Gramodaya centres. Employment and vocational training are also popular topics in youth group discussions. These are often attended by a trained worker from a Gramodaya centre who has received some training in the formulation and implementation of small scale projects in addition to the general training for community development work. Not every project suggested by a youth group is encouraged. A major consideration is whether the project will benefit only a few individuals or whether there are wider social benefits, i.e. "sharing". Another consideration is whether the activity conforms to "constructive action", one of the four principles of social development referred to earlier. A project for the manufacture of liquor for example would not be supported. It is only after considering such aspects as these that the more usual economic factors are investigated. It is relevant to mention at this stage that not every project suggested by youth groups requires vocational training. Nor is the vocational training desired by them always project-oriented. Requests of this kind are usually not accepted. There are other agencies in Sri Lanka, particularly the State, which provide vocational training. But they provide only the training. Other inputs necessary to profit from the training are usually not forthcoming. As a result, trained people in the villages are often unemployed. Sarvodaya tries to avoid such undesirable outcomes through discussions at the grassroots level, which are its major source of ideas in planning vocational training.

The planning and implementation of Sarvodaya vocational development activities is severely limited by the resources available. It was stated earlier that the major control exercised on the field staff is through the budget discussions held regularly. Not all the ideas which come up can be implemented. But the field staff are free to start activities - conforming to the general policy - if they can find their own funds. This has given rise to a variety of training courses in the same field. What type of course a district conducts depends on the resources it can command and the needs which have to be met.

Sarvodaya also organizes courses which may not be termed vocational training in the usual sense on account of their very short duration. It is possible in a relatively short time to train a set of people, particularly when they want to acquire skills in very specific tasks, such as making a particular kind of jam or cordial or learning a particular handicraft, e.g. making a coir mat. The short duration of such courses may also be due to lack of funds, inability of the participants to spend more time on the training, etc. Table 7 gives a selection of training courses conducted during a six-month period.

Table 7: A Selection of Vocational Training Courses
Reported during the Period 1.10.80 - 31.3.81

Name of Course	Duration	No. of Participants
Handicraft Training	2 days	25
Masonry	28 days	13
Woodwork	6 months	5
Agriculture	6 months	20
Weaving	3 months	20
Needlework	2 months	10
Making Artificial Flowers	2 weeks	30
Needlework	18 months	45
Making Coir Mats	2 days	35
Motor Mechanics	2 years	7
Brick Making	3 days	10
Making Artificial Flowers	6 months	34
Needlework	6 months	24
Handicrafts	12 months	21
Masonry	6 months	12
Needlework	1 year	25

Source: Reports of the districts for the period concerned (unpublished)

4.2.2 *The 6 month agriculture course at the Tanamalvila Development Education Institute and Farm*

Among the variety of vocational courses conducted by the Movement, some of those extending over 6 months or more had very adequate facilities. One of them, the course organized by the Tanamalvila Development Education Institute and Farm, has been selected for a more detailed description in this study because in the predominantly agrarian economy of Sri Lanka, vocational development in the field of agriculture is of prime importance.

The Institute and Farm comprise a 500 acre complex in the dry zone of Sri Lanka. Of these 500 acres, 200 are set apart for the Institute. The other 300 acres are being used to experiment with "Right Livelihood" as conceived by Sarvodaya. 50-acre-plots are given to groups of 12 young men and women, who are housed in living quarters, one for men, the other for women. They have to make their living from these 50 acres. Naturally the members of all the plots have to get together to plan their cultivation programmes. Much emphasis is placed on avoiding artificial fertilizer, pesticides, weed-killers, etc. Special classes are held for the members of these units.

The Development Education Institute has residential accommodation for some 150 people, classrooms and meeting halls. The complex as a whole has its own shop and stores, its own transport fleet, an appropriate technology unit which produces agricultural tools, a weaving unit, dairy and bio-gas units, etc. The complex functions as an integrated whole. When there is much work in the fields the entire student body as well as nearly all the staff are on the fields. The 50-acre plots serve as training grounds for the agriculture course. The follow-up programmes in the outlying villages are assisted by leading members of the 50-acre plot groups.

4.2.2.1 *Selection of trainees for the 6-month course*

About two months before the course is due to commence the district centres are informed about it by letter. Copies of application forms are also sent. Preference is given to applicants from the district in which the Institute is located. All applicants are summoned for an interview. They have to bear their own expenses. Applicants who are far away from the Institute are summoned to the closest Sarvodaya centre or more generally to the Sarvodaya Headquarters in Moratuwa, close to the capital of the country. The interview board comprises a representative of the Institute and two other Sarvodaya workers engaged mainly in development education. This board has to follow certain guidelines. Marks are allotted out of 100. The final selection is, however, not entirely based on these marks. Applicants who show evidence of having done manual work and are willing to undergo the severe hardships of dry-zone agriculture are given preference. Generally around 150 applications are received. The selected trainees are informed by a letter which reiterates much of what they had been told at the interview, especially the emphasis on simple dress, simple living, living with others. About 25 per cent of those selected do not turn up for the training. For the 6 month course conducted from October 1980 to April 81, 77 trainees were selected.

Of these 77, 46 were males and 31 females. 35 males and 21 females completed the course. Generally, the trainees are over 18 years of age. About 5 to 6 leave within two weeks of the start of the course. Some leave about halfway through the course on account of family problems, others on account of ill health. A few are asked to leave. While the educational background of the trainees is looked into, illiterates who are otherwise qualified are not turned away. They are recruited and given special help. The course referred to had seven such trainees.

4.2.2.2 *Objectives and content*

There is no formal statement on the objectives of this course. However, as all educational programmes conducted by the Development Education Institute form part of the Sangamaya development education programmes, the formal statement of the general objectives of those programmes (see sub-section 3.2.1) applies also to the Tanamalvila course. Of particular relevance are the third and to a lesser extent the first and second objectives.

The specific objectives of this course may be inferred from the syllabus. The introduction to the syllabus is as follows:

> "The theme of this course is development. Here not only economic development but spiritual development is also meant. The foundation for economic development is agriculture and appropriate technical science. Physical development and community development are invariably associated with the developments referred to above. In the light of the above, this course may be described as follows:
>
> 1. Agricultural development
> 2. Spiritual development
> 3. Physical development
> 4. Community development."

This extract clearly shows that the objectives of this course include some that are outside the traditional field of agriculture. Individual and social development are integrated with the vocational development.

It is worth noting that the syllabus and all the other documents presented here have been drawn up by Sarvodaya field workers who have had no professional training in pedagogy or, for that matter, in agriculture. Even the person in charge of the course has only completed the general secondary school.

4.2.2.3 *Instructional procedures - non-formal and informal learning*

Individual, social and vocational development being only different ways of analysing an individual's growth, the living together in the Tanamalvila complex is as much a part of the instructional procedures as lectures, discussions, field work, etc. Life on the complex is governed mainly by the requirements of the farm and the actual agricultural work. The daily schedule of the trainees is as follows:

Monday to Saturday

05.30 - 06.00	Morning family gathering
06.00 - 08.00	Work in the fields
08.00 - 08.45	Breakfast
08.45 - 11.00	Work in the fields
11.00 - 12.00	FREE
12.00 - 13.00	Lunch
13.00 - 13.30	FREE
13.30 - 15.30	Lectures, discussions, etc.
15.30 - 16.00	FREE
16.00 - 17.30	Work in the fields
18.30 - 19.00	FREE
19.00 - 20.00	Evening family gathering
20.00 - 21.00	Dinner

Sunday

05.30 - 6.00	Morning family gathering
06.00 - 08.00	Work in the fields
08.00 - 08.45	Breakfast
08.45 - 10.00	Work in the fields
Rest of the day	FREE

On Poya Day (Full Moon Day), which is a day of great religious significance to Buddhists, no work is done in the fields. The trainees and other Tanamalvila residents, i.e. some 200 people, almost all of whom are Buddhists, observe a full day's religious programme which includes meditation, discussions on religious themes, lectures on religious matters, etc. A Buddhist monk is resident on the complex. Depending on the farm requirements work in the fields sometimes goes on for the whole day. But not all the trainees are simultaneously engaged in work in the fields. They as well as the staff have to take turns working in the kitchen or the stores, cleaning the dormitories, the toilets, etc.

The family gathering with its combination of non-formal and informal learning is an important instructional procedure. All residents on the complex and even visitors are regarded as members of a family. The Sinhala language has separate words for elder sister, younger sister, elder brother and younger brother. Those who are roughly of the same age group use such terms along with the name. The older generation is referred to as "father", "mother", "uncle", etc. Attendance at the family gathering is voluntary. It is held in a large hall and everybody sits on the floor. Trainees take turns in conducting family gatherings for which a certain routine has evolved over the years. The morning family gathering, which takes place in all Sarvodaya centres all over the country, is generally very short, taking about half an hour. The first item is a silent meditation for about two minutes to collect one's thoughts and direct them towards the well-being of all, not only those present but also the absent ones, those outside the complex, those in the country... The extent to which one can do this varies and is a measure of one's personal development. The idea is to start the day by first eradicating thoughts of hatred towards anyone from one's mind and second by filling the mind instead with thoughts of loving kindness towards all living beings. The second item is for the entire group to sing the "Morning Family Gathering Song" which has been specially composed for this purpose. It speaks of the need to create a new and nobler man. A promise is given to refrain from five evils, namely killing, stealing, improper sexual behaviour, lying and taking intoxicants. The third item is a short speech of about five minutes by one of the participants who has been assigned to give it. He is free to choose his own topic. If any visitors are present they are asked to introduce themselves. Sometimes a visitor is requested to deliver the short address. The morning family gathering ends, as do all other family gatherings, with a song in which everybody joins. The gist of it is as follows:

May there be rains in time
May the fields prosper
May there be peace in the minds of men
May a righteous state lead to the
welfare of the world.

The song is an adaptation from the Buddhist scripture and is sung to the tune of a popular folk song.

The evening family gathering is longer in duration. The initial meditation is followed by religious observances, starting with the smallest group present. The majority group observes its religious rites last of all. This pattern is followed in all Sarvodaya centres. The address to the evening family gathering is longer; it is prepared by a trainee and referred to as the "Day's Speech". Usually a visitor is invited to deliver it. The rest of the evening family gathering is generally devoted to singing songs, doing dramatic sketches, do-you-know contests, impromptu speeches, etc. Residents generally make the arrangements for such items, but the person conducting the family gathering may call upon anyone to sing a song, give a talk, etc. Group singing is also a regular feature of the evening family gathering. The themes of the songs, many of which have been specially composed by Sarvodaya workers, are such as to develop the nobler qualities of the human mind.

This brief description of family gatherings may indicate that their purpose is to practise the four principles of social development. They also provide a training ground for leadership. Conducting a family gathering, in which sometimes well over 200 people participate, is not an easy task. To sing a song before such an audience fosters the development of self-confidence. It provides an arena in which hitherto unrecognized talent can emerge. Village youths who have up to now had "no place" suddenly find themselves in the centre of the scene and the audience is friendly and appreciative. The evening family gathering also provides time for anyone to express his opinion on any matter or to ask any question he/she wants.

The sense of togetherness and community spirit which is created by the family gatherings is an essential precondition for developing positive attitudes towards cooperation in the vocational field. Hence vocational development is an integral part of individual and social development.

The work in the fields is of two types. The trainees have a special plot on which they cultivate various crops, try out different techniques and different varieties, etc. under the guidance of the instructors. These are chosen from the permanent farm staff or from former trainees who live on the complex. The special plot is used mainly for training purposes, and the produce from it is bought by the kitchen unit. The other kind of field work is done on the main farm. There too the trainees work under the guidance of the regular farm staff. An essential feature is that the staff members themselves do actual work in the field. The type of work depends, of course, on the time of the year. Real production work on the farm constitutes a major part of the training.

The tuition as well as board and lodging and medical facilities are provided to the trainees free of charge. In addition, they are paid a small daily allowance of which they are allowed to use only a limited amount within the complex. The balance accrues to their credit and is handed over to them on completion of the course or whenever they leave.

Each trainee is expected to keep a daily record of his field work and a notebook which is examined occasionally.

Another point relevant to this study is that living on the complex for six months brings the trainees into contact with a variety of other occupations. The complex has a woodwork unit, a metalwork unit, a weaving unit, its own "supermarket", a tractor unit, a transport unit, a building constrution unit, a soya bean processing unit, etc. However, the six-month agriculture course is a prerequisite for following a training course in any other area.

4.2.2.4 *Evaluation of the course*

Since the staff and the trainees reside on the complex and work together on the farm, there is much informal discussion, personal contact and exchange of views. It will have been seen from the daily schedule that actual on-the-job training takes up much of the time. Practical work of this type, where the trainees can observe the fruits of their own labour and compare each other's plots, provides opportunities for a considerable amount of self-evaluation.

In addition to such informal procedures, certain formal instruments for evaluation are employed. Written tests comprising half-hour tests on the different types of crop are administered half-way through the course. These tests use a variety of item types such as completing the blanks, multiple-choice items and short-answer questions.

Longer written tests are administered at the end of the course. The following were used in the course which ended in February, 1980:

(i) Test on Sarvodaya Philosophy
Time: 1 hour Marks 100
The test contained 6 essay type questions out of which any 5 had to be answered.

(ii) Test on Cultivation of Rice
Time: 2 hours Marks 100
The test contained 6 essay type questions out of which any 5 had to be answered. The questions had from 2 to 5 parts, each part requiring fairly short answers.

(iii) Test on Dairy Farming
Time: 2 hours Marks 100
The test contained 11 essay type questions out of which 10 had to be answered.

(iv) Test on Principles of Agriculture and Miscellaneous Crops
Time: 1 hour Marks 200
The test consisted of 40 multiple choice items. Items which constituted Part I of the tests were on principles of agriculture. Part II of the tests contained the balance of 20 items on miscellaneous crops. The marks were equally divided between the two parts of the test.

(v) Test on Horticulture and Paddy Cultivation
Time: 1 hour Marks 200
The test contained 40 multiple choice items of which 20 were on horticulture and 20 on paddy cultivation. Marks were equally divided between the 2 parts.

(vi) Test on Miscellaneous Crops
Time: 2 hours Marks 50
The test contained 5 questions of which 1 was compulsory. Altogether 4 questions had to be answered. The compulsory question contained 25 parts each requiring a short answer. The others were also essay-type questions requiring short answers.

(vii) Test on Horticulture
Time: 1 hr. 30 mins. Marks 50
The test contained 6 essay-type questions of which 5 had to be answered.

The answer papers to the written tests are given back to the students towards the end of the course, and if this is not possible they are posted to them later.

During the last few weeks of the course "practical tests" are administered. The trainees are assigned certain "useful activities in the field" and are observed at work. Particular attention is paid to correct use of equipment, to cleanliness, speed and the "finish" of the work. The trainees are also observed at other times, for instance during meals. This is an informal procedure.

At the end of the course, the trainees also complete a final bio-data cum evaluation questionnaire consisting of 42 items. Each trainee is given a certificate of attendance at the end of the course. About 25 per cent of the trainees write back to the Institute after they have left.

4.2.3 *Community shop training course*

This course was organized to meet a special need. Although the need to establish a marketing and distribution network over which the villagers had some degree of control had long been recognized, the individual and social development in the villages had to reach a certain level before an economic enterprise of that nature could be launched with any hope of success. Otherwise there was a possibility that the "village shop" might have prospered in the usual economic sense but might only have served to strengthen the exploitative relations already existing, or it might have been strangled in its infancy by the usual economic "wars" of the existing network. The Sangamaya had financed the establishment of a community shop here and there, but the establishment of a network of shops was planned only recently when it was felt that a sufficient number of villages had reached a satisfactory level of social development.

The training course was an important item in the project entitled "The Development of Community Shops: A Rural Women's Project in Sri Lanka". The following extract from the project document defines the objectives of the community shop programme.

> "The establishment of community shops by Sarvodaya is in response to a need felt in many villages to have more and cheaper commodities available to them. It is also based on the precepts of Buddhist philosophy. In setting up community shops Sarvodaya is concerned with the creation of right livelihood. Buddhist philosophy defines four aspects of economic action as part of their livelihood:
>
> i) Diligence in efficient productive activity;
>
> ii) Preservation of what is produced and conservation of nature;
>
> iii) A positive social milieu in which one works, and
>
> iv) A balanced life-style in consumption.

> Thus the community shops are part of an overall Sarvodaya programme of integrated rural development to upgrade the standard of living of people in Sri Lanka while keeping in mind the moral, cultural and traditional factors involved as well as the social, economic and political aspects of development.
>
> In practical terms, the Sarvodaya Movement wants to establish a number of retail shops in villages which in the first instance will sell products imported, or produced on a large scale, as well as local products.
>
> The function of these shops is not only confined to selling consumer goods. It will also be a place which purchases village produce for consumption or for processing in the village or elsewhere in the island.
>
> The major results expected by the programme are fourfold: a) creation of right livelihood, b) increased commodities available at a lower price, c) lessening of the hold of middlemen on village families, d) increased authority and status for the village women running the programme. It is assumed that some of the profits will be used as incentives to customers in the form of shares while another portion of profits can be used to pay for pre-school activities and other Sarvodaya programmes. The shop itself will be built onto the pre-school thus reinforcing structually the coordination and cooperation of Sarvodaya activities." (Ariyaratne 1980c)

4.2.3.1 *Selection of trainees*

The first step in selecting trainees was to select villages. To be eligible for selection, a village had to satisfy and agree to the following conditions:

- it should be at a stage of social development where the childen's group, youth group, etc., were functioning,
- it should have a pre-school,
- the mothers' group should work successfully,
- the trained pre-school teacher and a member of the youth group should be the manageress and manager of the shop respectively,
- the manager and manageress should be approved by the mothers' group,

- a society for the community shop should be formed and registered under the Societies Ordinance, and
- a bank account should be opened in the name of the society.

A special unit was created at the headquarters to implement the project. During the first phase the project was restricted to three districts. Representatives of each district and two members of the unit selected 75 villages. Other criteria used were based on a survey of the principal markets, the availability of transport facilities, the suitability of sites for shops and stores, etc. 20 of these villages were selected for the first training course being described in this section. At the rate of two per village, this meant a selection of 40 people for the course. Applicants were asked to fill in a questionnaire. Among the items were questions about their community service training, which is an essential requirement for participation in any Sarvodaya training course, about the community services they had rendered in a village, and about their formal qualifications. Generally applicants for Sarvodaya courses are not rejected for lack of formal qualifications if they are otherwise found suitable. But in this particular course, formal qualifications were taken into account in the selection because of the nature of the work to be performed after training.

4.2.3.2 *Objectives and contents*

The course was designed as a sequence of stages in which theoretical sessions at the Sarvodaya headquarters were combined with practical application in a village setting. The course had the following stages:

(i) theoretical session at the headquarters from 8th September 1980 to 20th September 1980

(ii) practical training in village co-operative shops in their respective areas

(iii) further theoretical session at the headquarters from 24th October 1980 to 27th October 1980

(iv) final session at the headquarters from 5th December 1980 to 6th December 1980.

The sequence of topics covered in the first session at the headquarters is given below:

- The Sarvodaya philosophy means of generating income
- The objectives of the community shop programme
- Existing shops and the village economy
- Village groups and the community shop
- A method of conducting a village survey
- Quality control
- First-hand experience in quality control with respect to specific items
- Introduction to cash books and exercises
- Exercises on cash books and maintaining inventories
- Village survey
- Evaluation of village survey
- Marketing techniques
- Experiences of a Sarvodaya community shop
- Introduction to books to be kept by a community shop
- A savings scheme and granting of credit by a Sarvodaya shop
- Relations between a Sarvodaya shop and other village organizations
- Simulation of five different situations in a shop
- Evaluation of the course
- Instructions about village survey
- Sarvodaya and community shops.

The selection procedure described earlier ensured the selection of young men and women who were already knowledgeable about the Sarvodaya philosophy. The very first topic - in this particular course taken by the founder of the Movement himself - was designed to emphasize that income-generation is *not* purely an economic affair characterized by little consideration for anything other than earning an income. Income-generation should be governed by social, moral and spiritual considerations besides purely economic ones. The quality of the goods sold and the difficulties and problems encountered in maintaining quality are part of the content.

The sequence of topics dealt with in the second session at the headquarters was as follows:

- Experiences gathered in regional co-operatives
- How can community shops be used to provide the ten basic needs?
- The contribution of community shops to the pre-school
- How to maintain the relationship between the consumer and the community shop
- How to act so as to attain the objectives expected of the community shops
- Village surveys
- Relationships with the districts
- Stock books and account books of a shop
- Survey of consumer needs.

The second session dealt largely with topics arising out of the practical training in a regional co-operative and the village surveys conducted by the trainees. The main topics discussed in the final session at the headquarters were as follows:

- Loans from the bank
- The Constitution of the Village Community Shop Society
- Furniture and equipment required for the shop
- Evaluation of the course.

4.2.3.3 *Instructional procedures*

A prerequisite for instruction is a "clear and beautiful environment", which is the first of the ten Sarvodaya basic needs.In recognition of the influence of the environment on human behaviour, a Sarvodaya institute strives to provide a physical and mental environment which will facilitate learning. As mentioned earlier, an important part of the instructional procedures is participation in the life of a Sarvodaya centre - in this particular case the headquarters where the main Development Education Institute is sited. All the residents at the headquarters including trainees participate in the family gatherings held three times a day. (The headquarters of the Movement is atypical in that the majority of the 500-odd work-force are not resident in the complex.

The main procedures used during the first session were lectures and discussions in small groups and individual paper and pencil exercises on book-keeping, etc. The trainees were provided with a specially prepared booklet on the community shop programme designed for general distribution, with copies of the constitution of village societies and duplicated material indicating the structure of the different kinds of book to be kept by a shop. They were expected to study these materials on their own. In the course the same material was also used, and so was role playing.

Practical work in a regional co-operative store was, of course, a very important component. Each trainee was given definite guidelines regarding what should be observed during the practical training. These guidelines were not confined to work in cooperatives; the trainees were expected to gather some information about other shops as well. During this period of practical training, they also had to conduct a survey in their village. In the preceding session such surveys had been discussed and specific instructions regarding the conduct of the survey had been given. Duplicated survey forms to be completed during the period of practical training were issued to the trainees.

During the second session at headquarters the instructional procedures used were similar to those of the first session except that there were more discussions, some of them in small groups. The last session at headquarters was also chiefly devoted to lectures and discussions. In addition, a practical test was held. As part of the course evaluation, each trainee completed a questionnaire.

4.2.3.4 *Evaluation of the course*

Some formal instruments were used to evaluate the course. One has already been referred to and is given in the Appendix. For the practical training in a regional co-operative shop, the manager of the shop was also expected to complete a questionnaire as well as writing a report. Apart from these formal instruments, it is the practice in most Sarvodaya training courses to invite the trainees to make their comments as the course proceeds.

An important part of the evaluation was the actual-on-the-job-performance of the trainees. A major finding was that the course should have an even stronger practical bias.

5. CONCLUDING COMMENTS

The Sarvodaya Shramadana Sangamaya of Sri Lanka is a non-governmental organization working in around 4,000 of the 24,000 odd villages in the country. On a smaller scale it is active in other countries too, but the present report refers only to its work in Sri Lanka. All of its action programmes stem from its philosophy of development, the foundation of which is that the development of people is as important as their educational, social and political development. Not one of these components can be ignored without affecting the others.

This study shows that in Sarvodaya's vocational training programmes this principle is strictly adhered to. No vocational training it provides is divorced from moral, spiritual and social considerations, among others. Training in these aspects is an integral part of every vocational training course organized by Sarvodaya.

Another characteristic of the Movement's approach to vocational development could not be dealt with at length in this study. It is the belief that the structure of the labour market which a society should sustain with its resources should be primarily determined by the basic human needs of that society as a whole. "Creation of employment" is a secondary issue. The primary issue is "what employment should be created?". Sarvodaya development education programmes seek to create such an awareness with respect to vocations.

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THE POLISH CASE STUDY

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. PROFILE OF THE CASE STUDY

The Polish case study supports the thesis that the national system of education can make an outstanding contribution to the individual and social aspects of vocational development. The education system is based on Marxist philosophy and has certain characteristics which are largely typical of socialist countries. Primary education is compulsory and uniform. It extends through eight grades during which vocational development is emphasized by a comprehensive introduction to the role of technologies in the world of work and by prevocational instruction and exercise.

On the post-primary level 7,500 vocational schools enrol almost 890,000 students for training in 520 occupations (1980). An even larger variety of programmes is offered in adult education. Altogether the programmes range from the primary education certificate to higher education.

In order to promote the individual to his highest possible capacity no vocational programme is terminal. Successful completion is always connected with eligibility for further qualification in an advanced programme (see Table 1).

2. STAGES OF VOCATIONAL DEVELOPMENT

Early vocational development is already supported by the formal education system. It starts in nursery school with an introduction to general aspects of working life in Polish society and is carried through the stages of vocational awareness, systematization and experimentation in the subject area of "Work and Technology" in the primary school before employability is achieved through courses in post-primary education.

Table 1: Profile of the Polish Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula from a national system of formal and non-formal vocational education
Age Group Served	From 5 to 21 years of age and adults
Sponsor of the Programme	State-operated national system of formal and non-formal education with a continuum of prevocational and vocational programmes from preschool to adult education
Intention of the Programme	Provision of effective vocational learning through theoretical instruction about the world of work combined with productive work; utilization of different learning environments
Specific Traits	Vocational development is seen as vital part of personality development Three spheres of education - vocational, general vocational and general - are fused in every vocational programme

This process is accompanied by vocational guidance activities, since the ultimate aim of vocational development is considered to be twofold:

- preparation for the job best suiting individual abilities and aspirations, and
- demand-oriented inflow of properly trained personnel into the labour market.

In pursuit of these aims the teacher of "Work and Technology" is not only responsible for his own subject area, but is also charged with providing sufficient work-orientation in the school's overall curriculum.

About 95 per cent of the primary school leavers attend post-primary schools, where they receive training for employability in an occupation. Further training is offered within a complex system of non-formal education.

Workers are encouraged to continue their education either by skill training in their particular vocational field or in higher education. Close links between industry and training institutions provide effective opportunities for upgrading skills and for retraining workers if necessary.

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

The effectiveness of the vocational development process in Polish formal and non-formal education is enhanced by the principle of combining classroom-type learning about the world of work with practical work experience. Productive work is carried out in school workshops, in production facilities connected with schools or at worksites in out-of-school locations. Different learning environments are utilized in order to strengthen, enrich and enlarge the learning experience of all students.

All primary schools have a woodwork and a metalwork shop where basic skills are learnt and appropriate work habits are practiced in "Work and Technology" lessons. The metalwork shop is also equipped for practical work in electrical engineering.

From grade four onwards four hours monthly are allocated for additional production practice. In grades six to eight this time allocation is increased to eight hours. The "Work and Technology" teacher is in charge of this programme. He may choose to block the time available on a yearly or shorter basis.

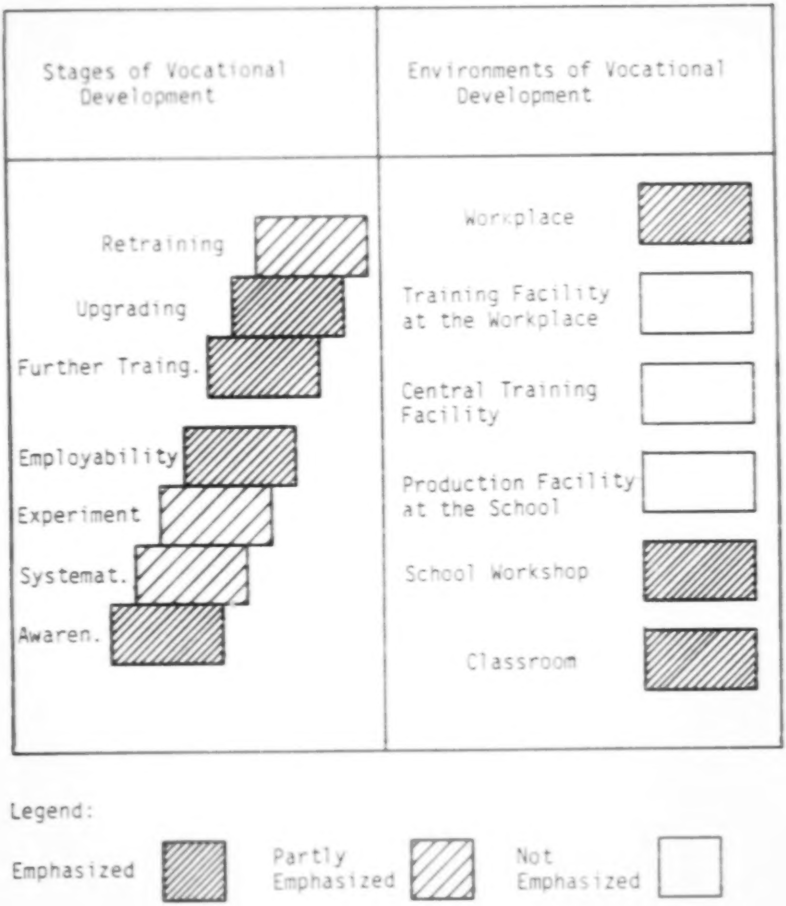
In adult education a compound system of learning and working is maintained. Factories offer one-year programmes for workers who want to obtain a primary school certificate and two- to three-year programmes on the secondary level of education (see Table 2).

4. DISTINCTIVE FEATURES OF THE CASE STUDY

Poland has established a continuum of prevocational/ vocational instruction from preschool through adult education. For the whole span of this continuum the State philosophy of a combination of classroom learning with productive work is observed as a basic principle. From primary school onwards it is also emphasized that work should be socially useful.

Another feature of the Polish approach to vocational development is the integration of prevocational and vocational curricula with programmes for the all-round development of the communist personality. No vocational programme is restricted to mere skill training.

Due to this close linkage of vocational aspects with the general development of individuals three spheres of education can be defined which are fused in every vocational programme: general education, general vocational education and vocational education. Vocational education is geared towards employability in a particular occupation or in a broad profile occupation (broad profile occupations have been introduced to reduce the number of trainable occupations from the present 520). General vocational education deals with non-job specific phenomena of the world of work such as interpersonal skills and other extra-functional skills related to the work environment. General education is primarily geared towards the development of non-vocational aspects of the personality.


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the Polish Case Study

The fusion of these three spheres of education also guarantees that certain general education standards are observed in all vocational programmes. Accordingly it is stipulated in Poland that from any vocational programme there must be access to another programme, more advanced in level, finally leading into higher education.

Access to higher education through promotional stages within the vocational programmes and the balanced proportion of vocational training and general education are features of the Polish education system which might serve as models for other countries.

ANALYSIS OF SCHOOL AND OUT-OF-SCHOOL EDUCATION FOR VOCATIONAL DEVELOPMENT IN THE PERSPECTIVE OF LIFELONG EDUCATION IN POLAND

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2.12

1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT

1.1 Geographic and Demographic Situation

Poland is situated in the eastern part of Central Europe. The country presents itself on the map more or less as a circle with a 400-mile diameter. It borders on the Soviet Union in the east, on Czechoslovakia in the south, and on the German Democratic Republic in the west. The Polish frontiers are 3,538 kilometres long, including 524 kilometres of Baltic Sea coast in the north.

By European standards Poland is a medium-sized country. It has a territory of 312,677 square kilometres. It is a low-lying country, though there is in its southern part a high range, the Tatra mountains. The longest river in Poland is the Vistula. The climate is temperate; the average annual temperature ranges from 6 to 8 degrees centigrade.

The degree of urbanization is indicated by the fact that out of the total population of some 37.3 million (1985), 22 million live in towns and 15.3 million in rural areas.

1.2 Socio-Economic Structure

Poland is a Socialist country. 12.7 million people, a high proportion of its population of working people, are employed in the state-controlled economy (see Table 1 for details). However, private ownership of the means of production exists to some extent in the crafts and, to a greater degree, in agriculture.

Some 19 million hectares of land, i.e. about half a hectare per inhabitant, are cultivated. The main crops grown are rye, wheat, potatoes, fruit and vegetables. Stock-farming and pig-breeding are also widespread and of a high standard.

Table 1: Number of Employees in State-Controlled Economy

National economy branches	1960	1970	1975	1978	1979
	in thousands				
Industry	2949	4072	4730	4784	4774
Building	783	1005	1320	1299	1274
Agriculture	407	720	863	944	941
Forestry	150	178	149	149	147
Transport and communication	684	933	1049	1093	1099
Trade	708	880	1062	1089	1073
(Domestic trade	695	858	1027	1059	1043)
(External trade	13	22	35	30	30)
Municipal economy		219	298	314	320
Housing management and non-material community services	215	140	149	177	189
Science and technology*	36	73	151	151	152
Education*	371	590	700	716	728
Culture and art*	64	83	76	80	81
Health service and social welfare	308	425	522	563	584
Physical education, tourism and recreation*		17	76	99	98
State administration and justice	195	204	188	190	192
(Justice only	35	47	54	53	54)
Finance and social insurance	58	80	95	108	112
TOTAL	7055	9017	11672	11982	11995

* Full-time employees only

Source: Internal data, Institut Kszałcenia Zawodowego

Poland has considerable resources of raw materials such as coal, sulphur, salt, zinc and copper ore as well as lignite and gypsum. Coal-mining, zinc-mining and copper-mining are well developed; shipbuilding, especially of fishing vessels, fairly well. Several harbours serve the medium-sized fleet. The building industry is also well developed, and so are the engineering industry producing tractors, cars, building equipment, mining machines, machines for the textile industry and machine tools, and the chemical industry producing hydrochloric and sulphuric acid. In addition, the following industries exist: light industry, textile industry, clothing industry, leather industry and food industry. The distribution of employment is presented in Table 1.

1.3 Philosophical Background of the Education System

Educational policy in Poland is determined by the Polish United Workers' Party, which is a Marxist-type party. This means it is based on dialectical and historical materialism. Initially it was interpreted from the point of view of determinism and mechanistic materialism, but now there are strong antideterministic tendencies. This is reflected in an attempt to raise the educational level and to make education widespread and common. Materialism is linked with an educational ideology represented by the majority of the members of the Educational Sciences Committee of the Polish Academy of Sciences. It consists in regarding education as an autotelic value independent of social conditions as well as in the prolongation of the period of general education.

The people value education highly. Many parents want their children to achieve the highest level of education, i.e. to complete a course of study in higher education, and so do the children themselves. However, working class people in particular seem to prefer training for an occupation in a vocational school to pursuing an academic course of studies in the secondary general school.

1.4 Historical Background of the Education System

Education in Poland has a long and rich tradition going back to the Middle Ages. In 1773 the National Education Committee the first central educational authority in the world, was founded in Poland. Then, for the next one hundred and fifty years Poland was deprived of independence. After the First World War the Polish educational system was restored, but the present system of education was not introduced until shortly after the Second World War. Its Marxist structure has been influenced by both tradition and economic policy. The desire for quick industrialization of the country was the reason for the rapid development of vocational education 1945 - 1955.

The present shape of the educational system is based on the Act of 15th June, 1961. The focus of this study, the eight-grade primary school, is compulsory for all children. It was planned at the Educational Conference held in 1945, in which the main role was played by the Polish Teachers' Association. Post-primary schooling, however, underwent many changes because two main tendencies were always running counter to each other. One, based on the 19th century tradition, expressed the general wish for the longest possible period of general education, whereas the other, though not denying the value of general education, considered that the educational system ought to cater for the economic needs of the country and hence gave priority to vocational education. Eventually the present types of vocational school emerged, but these two tendencies are still in conflict.

2. THE ORGANIZATIONAL STRUCTURE OF GENERAL, PREVOCATIONAL AND VOCATIONAL EDUCATION

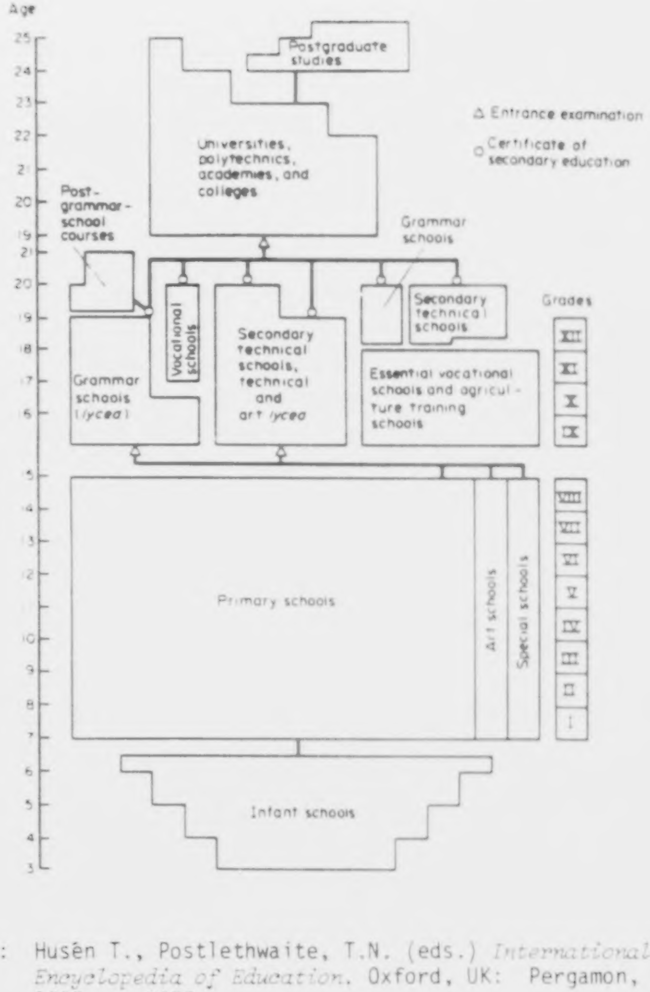
The eight-grade primary school with its continuous prevocational curriculum forms the basis of the Polish system of formal education and in particular of the Polish approach to vocational development. Following upon this primary school a variety of specialized secondary schools offer basic and advanced vocational training, partly connected with access to higher education. This system is continued and supplemented by institutions of non-formal education and, due to the high value attached to education in Poland, it is strongly assisted by informal education in the home, the peer group and other social settings.

Almost all schools in Poland are under the authority of the Ministry for People's Education. Only a few vocational schools are conducted by the Centre for Vocational Development, an institution which advocates vocational education for adults, and by church organizations.

2.1 The System of Formal Education

Formal education in Poland begins with nursery school, which is attended by about 40 per cent of children under six years of age. Part-time forms of nursery education, the so-called pre-school centres, are chiefly meant for six-year-olds. They have a compensatory function regarding the basic achievement level of children from different environments before they start primary school. Classes in these centres are usually offered twice or three times a week. Education about work values is given high priority.

The eight-grade primary school, which has a uniform instructional programme, forms the core of the Polish system of formal education. Attendance at this school is compulsory for all children. The subjects taught are: Mathematics, Natural Sciences, Arts, Polish language, History, Physical Education


Age
25
24
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21
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18
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16
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12
11
10
9
8
7
6
5
4
3
Postgraduate studies
Universities, polytechnics, academies, and colleges
△ Entrance examination
○ Certificate of secondary education
Post-grammar-school courses
Grammar schools
Vocational schools
Secondary technical schools, technical and art *lycea*
Secondary technical schools
Grammar schools (*lycea*)
Essential vocational schools and agriculture training schools
Grades
XII
XI
X
IX
VIII
VII
VI
V
IV
III
II
I
Primary schools
Art schools
Special schools
Infant schools

Source: Husén T., Postlethwaite, T.N. (eds.) *International Encyclopedia of Education*. Oxford, UK: Pergamon, 1985, p. 3952.

Figure 1: Structure of the Educational System

and "Work and Technology". This school also provides the basis for vocational education. From the first grade on prevocational contents such as attitudes towards working life, basic skills and basic vocational knowledge are taught in the Work and Technology lessons. Two unit hours per week are allotted to this subject. In addition there is from grade 4 onwards a two hours time allocation for practical experience. This time may be accumulated per month, six months or a year. Priority is given to out-of-school activities but it can also be taught in the school workshops.

About 95 per cent of the 8-grade primary school leavers attend schools in the system of post-primary education. Post-primary schools can be divided into secondary general schools and two levels of vocational school. 2- and 3-year vocational schools are intended to prepare skilled workers. 3- and 5-year secondary vocational schools prepare technicians and other middle-level personnel. Moreover, there exists a limited number of 4-year secondary vocational schools for economic occupations in the field of commerce.

Due to efforts to provide comprehensive in-school preparation for the large variety of skilled occupations the secondary school system is highly differentiated.

Successful completion of general secondary school or secondary vocational school gives the right of admission to higher education.

The majority of graduates from general secondary schools continue their studies in an institution of higher education. 1) Those who are not admitted to higher education can train for an occupation in 2-year post-secondary schools for middle-level personnel. On this level also a high degree of vocational differentiation is maintained.

This complex system of post-primary schools requires vocational guidance services. These are largely part of the formal education system. It is the responsibility of all primary school teachers to include in their lessons questions of vocational guidance in their particular subjects. The teacher of "Work and

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1) The system of higher education in Poland consists of 10 Universities, 10 Technical Universities, 9 Higher Technical Colleges, 7 Higher Agricultural Colleges, 5 Higher Economic Schools, 4 Higher Educational Colleges, 10 Medical Academies, 6 Higher Schools of Physical Education, 16 Higher Schools of Fine Arts, Music, Drama, Film, 2 Naval Colleges, 1 College of Social Studies, 2 Theological Colleges.

Technology" has to monitor this process - so far, however without a formal organizational set-up. Furthermore Vocational Guidance Centres, which have been established in most communities, support the work of the schools and provide person-to-person counselling if needed. These centres are also under the authority of the Ministry of Education.

2.2 Non-Formal Education Programmes

School-type forms of education and institutions of higher education are supplemented by numerous educational activities organized and conducted by social institutions and organizations. One of them is the Society for the Popularization of Culture and Science which is not only concerned with the popularization of science but also organizes courses aiming to develop a variety of skills. These courses include general courses in different fields of science as well as many polytechnical courses. People are taught how to paint their flat, how to sew, how to construct household fittings; they learn the arts of gardening, car maintenance, driving, typing, etc. The majority of these courses introduce the students to different kinds of work. Such courses are also organized by other associations, for example the Federation of Engineering and the Association of Vocational Development Centres, which organizes not only polytechnical courses, but also specific vocational courses, for example welding courses, tanning courses, courses in electrical engineering and radio engineering. A great number of occupational associations, such as the Association of Accountants and Shorthand Writers, organize courses in keeping with their occupational profile. "Lingwista", a co-operative society, organizes language courses.

Furthermore, analogous to the differentiated secondary school system for young people, a system of secondary schools for adults has been established. Within this system working people can complete their primary and secondary general education and receive basic and advanced vocational training in the form of recurrent education.

2.3 Informal learning

Informal learning in Poland has its main base in the family, but it is also a concern of youth clubs, local clubs within housing estates and all cultural facilities in towns and in the countryside, including cinemas and theatres.

The educational influence of the family is decreasing in Poland as a result of urbanization and a high rate of women's employment. In peasant families it has remained much stronger. On the other hand, the influence exercised by youth organizations has increased considerably in the last thirty years. Nowadays, the main role is played by the Scouts' organization, which takes on various tasks, not only those involved in the development of resourcefulness and practical skills.

Teenagers may benefit from informal learning in unorganized groups or youth clubs. A differentiation should be made between rural environments where informal groups are based on the neighbourhood, and the city, where clubs group together young people living in different districts. The relatively easy means of communication favour the diffusion of differing views among the 15-18 year olds coming not only from different districts of the same town but also from different towns. An increased exchange of attitudes between country youth and town youth is also noticeable.

Another source of informal learning is the mass media. According to the main lines of educational and cultural policy they devote much time to the popularization of history, geography and natural science and to advocating positive involvement in social questions including working life.

Although the relationship of informal learning to vocational development may not be very obvious, it is probably the most effective domain of preparation for working life. It encompasses the whole range of interpersonal skills which are indispensable for success in the workplace. Getting along with friends and superiors helps one to get along with fellow workers and supervisors.

3. PREVOCATIONAL CURRICULA: EARLY STAGES OF VOCATIONAL DEVELOPMENT IN THE CONTEXT OF INDIVIDUAL AND SOCIAL DEVELOPMENT

Early vocational development is continuously supported in Poland by the formal education system. It starts in nursery school with an introduction to general aspects of working life in Polish society and is carried on through the stages of vocational awareness, systematization and experimentation by "Work and Technology" in the primary school before employability is achieved through courses in post-primary education.

This process is accompanied by various activities in vocational guidance. Careful recruitment of candidates for the different types of vocational school is considered an important step to achieving the ultimate aims of the vocational development process:

- preparation for the job best suiting individual abilities and aspirations and
- sufficient inflow of adequately trained personnel into the labour market.

In Poland these two aspects are becoming more and more divergent. Thus it seems pertinent to undertake efforts to decrease the divergence. Imbalanced choice of an occupation, i.e. a choice which is not accepted by an individual or by the society, results in unfortunate effects for both parties. The individual may experience a lack of satisfaction and identification with his job, and society may have to cope with low productivity from a worker who rejects his job.

In this context vocational guidance is a particularly important element of educational work. It is perceived as a long term process based on a whole series of activities, starting with vocational pre-orientation in nursery school and culminating in intensive guidance sessions in grades 7 and 8 of the primary school.

3.1 Development of Awareness in Prevocational Education

Awareness relating to the vocational field has two main aspects: a moral and social one, and an instrumental one. Each of these encompasses several dimensions which the Polish education system seeks to develop through polytechnical education, especially through "Work and Technology", a subject which was introduced into the curriculum of the 8-grade primary school in 1975 to replace the former "practical and technical activities".

The atmosphere in Poland, where nearly all men and a high percentage of women are employed in some occupation, is propitious for the development of vocational awareness by the young. By the time the children come to nursery school or primary school, they already have a semi-conscious idea that it is normal and necessary for all adults to work in some kind of job. But they are still ignorant of the nature of these jobs.

In the early stages of prevocational education, they progress from this state of vague awareness to recognizing and differentiating between various types of work. In the nursery school, this development is achieved by means of games, especially simulation and role playing. In these games the children first learn to distinguish easily recognizable external features of the simulated jobs. Next they are initiated into simple job performance and begin to acquire some basic skills and abilities. In the process the necessity of being prepared for work dawns on them. As the mind of the nursery child is receptive and its personality is open to influence, it is very important that the first contact with various forms of work should foster the development of positive attitudes to work.

In the primary school the children gradually advance to an awareness of the more intricate aspects involved in work performance. In order to cover the various dimensions of vocational awareness referred to in the first paragraph of this section, elements of polytechnical education are introduced into the content of general education subjects such as mathematics, physics, biology and chemistry to draw the attention of the pupils to the significance of science for practical activity and to emphasize, for instance, the relationship between knowledge and action, while elements of a materialistic outlook reveal to them the significance of work for social existence. The Work and Technology lessons make them acquainted, both in theory and practice, with tools, machines and raw materials used in production as well as with elementary production engineering and work organization. Awareness in the field of work differentiation is reinforced by visits to factories or meetings with outstanding members of the working world and by vocational guidance.

Beyond 8-grade primary school, the emphasis is on awareness of the duties of a citizen and of the need to acquire the abilities and skills required in the world of work. This process is strongly supported by the mass media. Also the organization of the Catholic church emphasizes the development of vocational awareness.

3.2 Systematization in Prevocational Education

Prior to entering the 8-grade compulsory school, the child has already acquired different manual skills in the family, in nursery school and through contact with other children. Most of these skills and abilities were connected with hygiene, clothing and food.

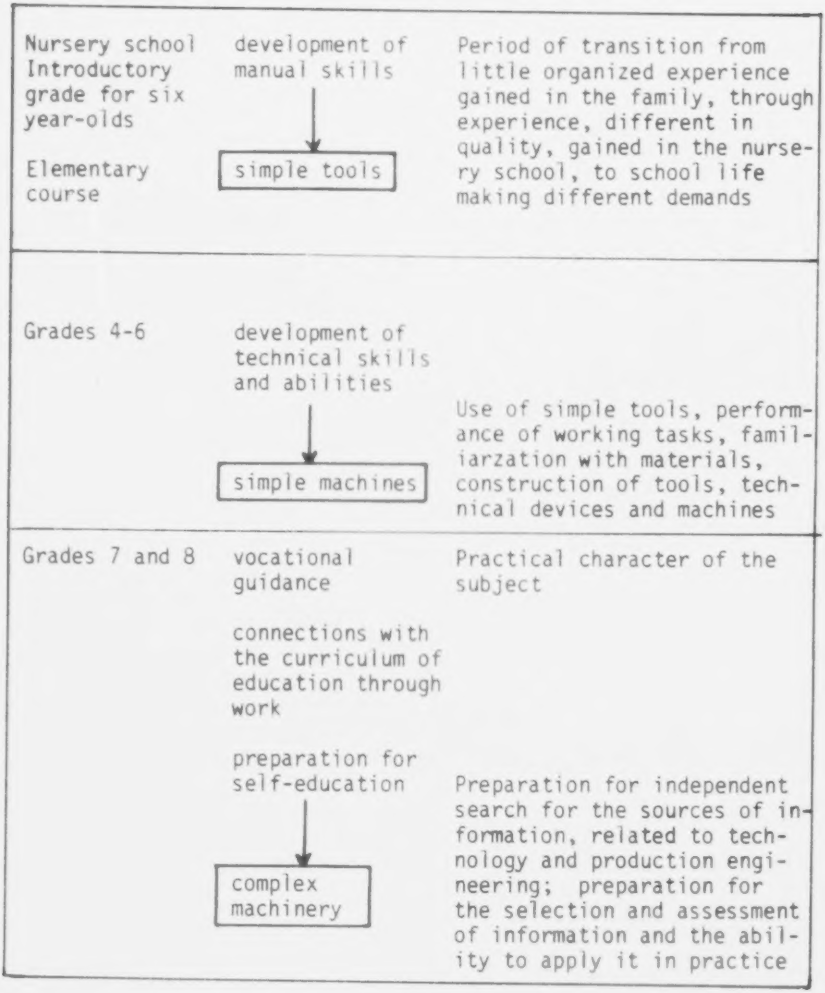
At school the development of practical skills and the acquisition of knowledge concerning human work occurs in various disciplines, starting with the native language and mathematics and continuing in classes conducted in workrooms, such as biology and chemistry. This process is synthesized in Work and Technology (see Table 2).

As the curriculum of this subject shows (see Figure 2), its main task is to develop practical skills and abilities. At the same time, its underlying principles demand that work culture, technical culture and consideration of economic aspects, to mention only the aspects of special relevance in the present context, should be reflected in its practical activities. Hence the content of Work and Technology is selected in such a way that it makes the pupils acquainted with all spheres of human activity, and that the two objectives mentioned above are constantly interwoven.

In grades 1 to 3, the skills to be acquired are mainly manual ones, while in the higher grades they are more technical in nature. Their development is based, firstly, on increasingly difficult and complex materials, starting with paper and cardboard and followed by wood, plastics and finally metal, and secondly, it is based on acquisition of the ability to handle tools and machines of common use. At this stage the first level

Table 2: Work and Technology in 8-Grade Primary School

	Abilities, knowledge and attitudes	Grade							
		I	II	III	IV	V	VI	VII	VIII
Main course	I. ELEMENTS OF WORK CULTURE	+	+	+	+	+	+	+	+
	- work organization and economics - safety and hygiene at work								
	II. FUNDAMENTALS OF TECHNOLOGY								
	1. Materials science and production engineering								
	- paper and miscellaneous materials	+	+	+					
	- wood				+				
	- plastic, textiles					+			
	- food, nutrition and technical domestic equipment					+	+		
	- metal						+	+	
	- theory of machines							+	+
	- electrical engineering and elements of electronics								
	- electronic systems and automatic control engineering								
	2. Technical work								
	assembly and dismantling/mechanical and electrical engineering	+	+	+	+	+	+	+	+
	- service and maintenance	+	+	+	+	+	+	+	+
	3. Technological information	+	+	+	+	+	+	+	+
	Technical tasks								
	III. SELECTED PROBLEMS IN TECHNOLOGY AND ECONOMICS	+	+	+	+	+	+	+	+
	IV. ELEMENTS OF VOCATIONAL GUIDANCE	+	+	+	+	+	+	+	+
	V. PUPILS' PRACTICE IN ENTERPRISES (4 unit hours monthly) To be chosen by the school:								
	- industry				+	+	+	+	+
	- agriculture				+	+	+	+	+
	- crafts				+	+	+	+	+
Complementary course	OPTIONAL ACTIVITIES To be chosen by pupils:								
	- Subject-problem, monographic (from technological group), optional (2 unit hours weekly)							+	+
	- introductory courses of vocational preparation (1 year course - obligatory during 1 year - 2 unit hours weekly)								
	- Clubs and societies - technical, optional (2 unit hours weekly)				+	+	+	+	+



Nursery school Introductory grade for six year-olds Elementary course	development of manual skills ↓ simple tools	Period of transition from little organized experience gained in the family, through experience, different in quality, gained in the nursery school, to school life making different demands
Grades 4-6	development of technical skills and abilities ↓ simple machines	Use of simple tools, performance of working tasks, familiarzation with materials, construction of tools, technical devices and machines
Grades 7 and 8	vocational guidance connections with the curriculum of education through work preparation for self-education ↓ complex machinery	Practical character of the subject Preparation for independent search for the sources of information, related to technology and production engineering; preparation for the selection and assessment of information and the ability to apply it in practice

Figure 2: Successive Stages of Preparation for Handling Work Situations: "Work and Technology" Curriculum, 8-Grade Primary School

of technical culture, i.e. the level of consumers, is reached.

More advanced skills and abilities are gradually acquired in the higher grades. The pupils learn to use tools and machines in accordance with their properties and technological descriptions and to resolve problems arising in the course of their practical work. Furthermore, they are taught to design their own models, calculate the costs of tools and raw materials and perform the successive operations involved in the execution of their tasks. Thus they get acquainted with the entire manufacturing process of the object they have themselves designed. This development is supported by spells of practice in enterprises where they get to know further materials and technological devices. On completion of the primary school they have thus been brought close to the second level of technical culture, that of producers.

The concept of personality formation underlying these contents of "Work and Technology" emphasizes the interactive relationship between practical work and technical culture, economic education, intellectual growth, aesthetic education and social and moral education.

Vocational guidance constitutes an important component of the instruction in grades 4-6, given in "Work and Technology" classes. The school curriculum for these grades includes a period of study of interests in various spheres of social life. This type of educational activity encourages in children the desire to seek their own place in the world of work.

Especially through instruction in "Work and Technology", the pupil of this age range acquires, in a systematic way, a good deal of information on occupations. He learns about skills which he could perform in accordance with his abilities and interests. Therefore these classes, together with extracurricular activities, foster the development of better-oriented, "specialized" interests that influence occupational choice. It is very important to provide pupils with an opportunity of getting into closer contact with typical occupational tasks and activities, for two reasons: 1. better knowledge of occupations and their characteristic features, and 2. the opportunity to learn more about themselves, about their own vocational abilities and interests. This will enable them to match their vocational traits with the characteristics of occupations. This period of increasing insight may therefore already result in preliminary choices, and valuable experience is gained for the process of occupational decision-making.

3.3 Experimentation in Prevocational Education

In the second half of the primary school years it becomes increasingly important for pupils to test their hands-on capabilities. In "Work and Technology" there is provision for woodwork and metalwork in grades 4 to 8. Every primary school is equipped with two separate workshops for this purpose. The woodwork shop is equipped with hand tools and the necessary simple machines; the metalwork shop has a hand tool kit and simple lathes, grinding and drilling machines. The latter also has equipment for electrical engineering work.

In the workshops useful objects are produced. The pupils learn not only how to use tools and operate machines, but also how to plan their work, how to calculate the costs of each object and what type of work organization is required. Furthermore they are familiarized with the principles of division of labour and with post-operational and inter-operational control.

Before the pupils undertake a given task, its purpose as well as the usefulness of the object to be produced and the type of production required are explained to them, and the needs in terms of raw materials, tools, machines and energy are analysed. The teacher shows a specimen of the object to be produced and points out its characteristic features.

The organization of the pupils' production practice is one of the duties of the teacher of "Work and Technology". In grades 4 and 5, four hours monthly, which the teacher may combine into a period of 36 hours or six days once a year, are devoted to this training. In grades 6 to 8 eight hours monthly are allocated for on-the-job experience.

If a teacher does not combine the whole time allocation for production practice, it is usually devoted to field trips. The pupils may be taken round a specialized shop, a museum or an enterprise. In general, such trips are preceded by related practical activities performed by the pupils.

Production work can be organized either in the workshops of the primary school or in those of a vocational school. Sometimes the facilities of enterprises are utilized. A special example of successful production practice is the pupils' participation in the folkloristic or artistic handicrafts-work done in various areas of Poland.

Production practice provides pupils with an opportunity to get acquainted with modern technology. It introduces them to modern work organization and teaches them how to co-operate in a real work situation. As an example, a one-year programme of production practice for grades 6 to 8, prepared by a school in a small industrial town is presented in Table 3.

In the final grades of the primary school vocational guidance activities are particularly important. In grade 8 each pupil has to decide if he wants to continue general education in the general secondary school or if he wants to prepare for an occupation in one of the vocational or secondary vocational schools.

In order to prevent immature decisions, 8th grade pupils receive a large amount of vocational information in the form of literature, slides and sound tracks. Special tutorial classes and classes in civic education provide additional guidance.

Increasingly the emphasis is laid on guidance methods which allow the pupils an active role in this developmental process. They select their own vocational information, arrange interviews with representatives of different occupations and establish close contacts with vocational school pupils and factory workers. Visits to vocational schools are arranged during which 7th and 8th grade primary school pupils get to know the courses run by these schools, in particular their workshop training. As a part of co-operation with factories, they get well acquainted with the different types of work performed in them, and they gain hands-on experience themselves.

Those pupils who have difficulties with making an occupational decision receive special guidance, based on medical and psychological tests, in vocational guidance centres. Such centres, which are operated by the Ministry of People's Education, are scattered all over the country. Their number exceeds 500. The staff of these centres are in contact with the pupils of grades 7 and 8. They arrange regular meetings at the primary schools and carry out training for vocational guidance organizers.

Unfortunately the guidance process still has some shortcomings. Guidance materials are not of high quality, the pre-

Table 3. Pupils' Work Practice in Enterprises: An Example of a General Programme of Manual Work

No	Content	Who conducts the classes	Where	Activities performed	
				by the teacher	by the pupil
1	2	3	4	5	6
1 Preparation	- Introduction into problems involved in industrial training - Principles underlying organization - Making pupils ready to meet a specialist - Labour legislation	Teacher	School workshop /or vocational school workshop		- To get acquainted with the whole of the programme, including content and timetable (accounting) for the whole year - To learn main rules of work safety code
2 Instruction	- Specialist's workplace - Preparation of materials and tools - Tools: construction, grip, use - Production engineering display-instructions	Specialist (instructor, craftsman, farmer)	Specialist's workshop or farm	- To ensure pupils' safety - To make notes and, if possible, to record specialist's instructions on photograph or on tape - To prepare technological information (technological documentation)	- To watch the specialists' work performance - To ask questions - To make notes - To make technological tests - To participate in the preparation of documentation
3 Proposals for improvements - work organization	- Exchange of remarks-conclusions - Laying down rules of production organization and safety measures - Preparation of a schedule - Assignment of tasks to each pupil (assistant teachers) - Work performance in accordance with the schedule - Supervision and assessment - Proposals for improvements	Teacher	School workshop or enterprise	- To steer the process of preparation - To safeguard correct and safe manufacturing processes - To discuss problems involved in engineering and productivity	- Careful, neat and skilful work - To present proposals for improvements
4 Work - control/ assessment	- Making use of the proposals for the improvement of production - Production work - Correction of mistakes if such exist, by specialists	Teacher Specialist	School workshop	- To draw the pupils' attention to time factor in the process of production - To control and assess together with the specialist	- Work - Control - Assessment

Complementary knowledge	5	- Instructional trips aimed at the development of pupils' interests, the broadening of their views upon the type of work they carry out in the school	Teacher	Museum, shop, etc.	- To prepare the pupils for the trip: what they should pay attention to, what they should ask about - To sum up the trip - Conclusions	- To write down observations - To exchange views and impressions - To draw conclusions
Work - calculation	6	- Production work with elements of calculation (saving of materials, energy, tools and time)	Teacher	School workroom or vocational school workshops or enterprise	- To prepare the process of production - To make this process quick and safe (safety measures) - Discussion and production cost accounting	- Assistant teachers help the teacher - Work - control assessment
Work - improvements	7	- Production work with elements of standardization (production and consumption improvements)	Teacher	Vocational school workshops or enterprise	- To prepare the process of production - To make this process quick and safe (safety measures)	- Assistant teachers help the teacher - Work - control - assessment
Work - effectiveness	8	- Production work - control selection - Preparation of products for sale, transference	Teacher	Vocational school workshops or enterprise	- To prepare the process of production - To make this process quick and safe (safety measures)	- Assistant teachers help the teacher - Work - control - assessment
Vocational guidance	9	- Summing up the whole year's work - Assessment of economic outcomes of pupils' work performance - Characteristics of a newly learnt vocation	Teacher Specialist	School workshop or specialist's workshop	- To supervise pupils setting everything in order - To start a discussion on newly learnt and to guide it - To put the stress on significant elements	- To clean and maintain tools and machines - To protect materials

paration of teachers and organizers of vocational guidance at school is inadequate and a formal document clearly defining the status of organizers is still lacking. These factors hamper the success of vocational guidance activities.

4. VOCATIONAL CURRICULA: ADVANCED STAGES OF VOCATIONAL DEVELOPMENT IN THE CONTEXT OF INDIVIDUAL AND SOCIAL DEVELOPMENT

The transition from the 8-grade primary school to secondary education marks the progression from the prevocational type of education not geared towards specific occupations to vocational training based on functional skills for performing a particular skilled job. In the final grades of primary school the pupils have gone through the stage of vocational experimentation where they have gained actual work experience through exploring occupations of their choice and finding out to what degree the respective skill requirements match their abilities and interests. This process is accompanied by intensive activities in vocational guidance, the ultimate goal being vocational decision-making regarding the choice between a manual occupation and a course of advanced general education after completing grade 8 of the primary school. With admission to a vocational school in the secondary sector of the education system the pupil then enters the stage of vocational preparation leading to employability in a skilled occupation.

4.1 Employability through Vocational Education

Vocational education is not restricted to training in secondary schools. It includes the system of higher education. For the purposes of the present study, however, the analysis will be limited to the basic vocational and secondary vocational schools.

The main goal of vocational schools is to educate a good citizen and a good worker. This goal is pursued on two qualification levels. The basic vocational school is designed for the training of skilled workers while the secondary vocational school caters for the manpower need of middle-level personnel, such as technicians.

Table 4: Programme of Instruction
Basic Vocational School
Occupation: operator of agricultural machinery
Age of candidates: 15-17 years
Education required: completion of primary school

No	Subject	Grade			Total number of unit hours per week
		I	II	III	
		Number of school weeks			
		30	30	30	
		Number of unit hours per week			
1.	Polish language	3	2	2	7
2.	Civic education	-	-	3	3
3.	Mathematics	3	2	2	7
4.	Physics	2	2	-	4
5.	Physical education	2	2	2	6
6.	Military training	-	1	-	1
7.	Mechanical drawing	3	-	-	3
8.	Theory of machines	-	2	2	4
9.	Electrical engineering	-	2	-	2
10.	Agricultural machines and tractors	-	3	4	7
11.	Plant cultivation	2	-	-	2
12.	Traffic regulations	-	2	-	2
13.	Work safety and labour legislation	2	-	-	2
14.	Business management	-	-	2	2
15.	Practical vocational training	18*	18*	18*	54
	Total:	35	36	35	106
-	Classes in civic education	1	1	1	3
-	Tractor driving lessons in grade 2 - besides practical classes - 12 hours per pupil				
	Extracurricular activities:				
-	Russian language	2	2	2	6
-	Classes in family education	1	1	-	2

Number of unit hours devoted to physical education and sports is determined by the Ministry of Education Regulations of Nov. 25, 1971 (Dz.Urz. MOiSW nr B-16, poz.102)

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* In the case of adolescent workers, the number of unit hours is in agreement with the Working Code

A separate place in this system is occupied by artistic education; education of musicians or dancers begins already in specialized 8-grade primary schools.

About 90 per cent of the pupils complete primary school. For continuing their education they can choose among 3-year general secondary schools which prepare for admission to higher education, 2-to 3-year basic vocational schools which offer training for skilled occupations, 4-to 5-year secondary vocational schools, which offer training for middle-level positions and the experimental 4-year secondary vocational schools, whose aim is to implement in four years the programme of general secondary education and the programme of vocational preparation up to the level of 'skilled worker'.

18 to 20 per cent of the graduates from primary schools are admitted to general secondary schools. All other pupils have to choose one out of some 250 workers' occupations in the basic vocational and 4-year secondary vocational schools; the regular secondary vocational schools even offer some 270 occupational specializations. In practice this choice may not be easy, for some schools may be far distant from the students' homes, and boarding schools cannot accommodate all of them.

Examples of the programmes of the basic vocational and the secondary vocational school are presented in Tables 4 and 5. When the programme of a 3-year basic vocational school for agricultural machine operators is compared with the programme of a 5-year secondary vocational school for automobile technicians it is apparent that the latter is based on more extensive theoretical instruction.

For graduates from the basic vocational school and students who leave the general secondary school after the second grade, further vocational training is offered. From both types of school admission can be sought to a 3-year secondary vocational school. However, because of the strong general education background of students from general secondary schools, emphasis is laid on the vocational part of the instruction. An example of such a programme is given in Appendix 1. Graduates from the basic vocational school on the other hand have to go through a mainly theoretical programme, as described in Appendix 2.

Finally, graduates from the general secondary school who have not been admitted to higher education can attend 2-year post-secondary schools in about 30 selected vocational fields.

Table 5: Programme of Instruction
Secondary Technical School
Occupation: technical mechanic
Specialization: motor vehicles
Age of candidates: 15-18 years
Education required: completion of primary school

No	Subject	Grades					Total number of unit hours per week
		I	II	III	IV	V	
		Number of school weeks					
		34	34	34	30	30	
		Number of unit hours per week					
1.	Polish language	4	4	3	2	2	15
2.	Russian language	2	2	2	2	-	8
3.	History	2	2	2	-	-	6
4.	Rudiments of social science	-	-	-	-	3	3
5.	Mathematics	5	4	2	2	2	15
6.	Physics	2	2	2	2	-	8
7.	Chemistry	2	2	-	-	-	4
8.	Physical education	2	2	2	2	2	10
9.	Military training	1	2	2	-	-	5
10.	Fundamentals of machine construction	3	3	4	-	-	10
11.	Metal working and materials science	4	2	-	-	-	6
12.	Electrical engineering and motor vehicle electricity	-	-	2	2	-	4
13.	Engines for motor vehicles	-	-	2	5	-	7
14.	Motor vehicle chassis and body	-	-	2	5	-	7
15.	Technology of motor vehicle service and repairs	-	-	-	2	4	6
16.	Specialized classes*	-	-	-	2	2	4
17.	Maintenance of motor vehicles	-	-	-	-	2	2
18.	Traffic regulations	-	-	-	2	-	2
19.	Work safety and labour legislation	-	-	-	-	2	2
20.	Industrial plant management	-	-	-	-	3	3
21.	Motor vehicle laboratory	-	-	-	3	6	9
22.	Practical classes	6	6	6	-	-	18
	Total:	33	31	31	31	28	154

No	Subject	Grades					Total number of unit hours per week
		I	II	III	IV	V	
		Number of school weeks					
		34	34	34	30	30	
		Number of unit hours per week					
-	Classes in civic education	1	1	1	1	1	5
-	Vocational practice - in grade 4, 8 weeks (4-week period of practice during a school year repeated during summer holidays)						
-	After-school driving lessons - 35 hours per pupil in grades 4 and 5						
	Extracurricular activities:						
-	Classes in family education	1	1	-	-	-	2
-	Second foreign language	2	2	2	2	2	10

Number of unit hours devoted to physical education and sports is determined by the Ministry of Education Regulations of Nov. 25, 1971 (Dz.Urz.MOiSW nr B-16, poz.102)

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* These hours are at the headmaster's disposal (having consulted specialist school inspectors, local planning committee and the enterprise that is in charge of this particular school)

This complex system of preparation for work consists of approximately 7,500 vocational schools enrolling almost 890,000 students (1980) in more than 520 occupations. Efforts are, however, made to reduce the number of trainable occupations by the introduction of "broad profile occupations". Specializations such as lathe operators, borers, grinders and millers have been grouped together under the heading of machine operator. More than 200 vocational schools have already established programmes for such "broad" profile occupations.

Most vocational schools are equipped with workshops. Since practical work is emphasized the schools enjoy a high productivity. In 1979 the returns from products and services amounted to over $ 50 million. However, the time allocation for practical work does not exeed 50 per cent of the total instruction time and it can be as low as 13 per cent in the 5-year secondary vocational schools.

Achievements in general education and vocational subjects are strengthened through a large number of extra-curricular and out-of-school activities. Various kinds of contest and competition encourage the students to demonstrate their competence. Some of these contests and competitions in vocational fields are: the technical knowledge contest, the agricultural knowledge and skills contest, the young technology masters' competition, the youth competition for building occupations called "Golden Trowel", the typing competition, the "The Small Statistical Year-Book" competition, the competition for the best thesis on labour protection, the competition called "Golden Safety Lamp", the mining knowledge contest, the general and technical knowledge contest, the nursing competition and the competition called "Green Diplomas" which is organized in agricultural schools.

Although professional excellence is one of the main goals of Polish vocational schools, their objectives go far beyond the preparation of well-trained workers. Active participation in culture and society, involvement in workers' self-government and development of a sense of responsibility for oneself and others are goals of equal importance.

4.2 Further Vocational Education, Upgrading and Retraining in the System of Non-Formal Education

Beyond initial vocational training a wide range of programmes for further training, upgrading and retraining is available in Poland. In 1980 these programmes enrolled about 400,000 students.

Adult workers who do not possess the primary school certificate can obtain an equivalent for it after completion of a 1-year basic vocational education programme. Such programmes are organized by factories and continuing education centres.

On the basis of the 8-grade primary school, workers can attend the adult forms of basic vocational schools and of secondary vocational schools. The first programme has a duration of two years. The second must be in line with the learner's employment; it has a duration of three years.

For graduates from primary or secondary schools a large number of evening programmes leading to further qualifications are available. In principle the adult learner can choose among the following provisions of middle level vocational training:

- secondary vocational schools of 4 or 5 years' duration, based on the 8-grade primary school,
- secondary vocational schools of 2 1/2 or 3 years' duration, based on the basic vocational school,
- postsecondary vocational schools of 2 1/2 or 3 years duration, based on the secondary general school.

The learners are entitled to paid educational leave for the examinations.

Successful completion of their programmes entitles them to apply for admission to institutions of higher education.

The theoretical part of the curricula in adult education is similar to the regular school curricula. Practical activities are, however, reduced to a considerable degree because of the students' ample on-the-job experience. Workshop activities and the period of production practice are thus excluded from the curricula while workroom classes are retained.

In addition to these programmes within the state system of adult education a large number of courses are organized in factories. Short-term work safety courses enrol more than 1.1 million students, for example.

5. SELECTED ASPECTS OF THE VOCATIONAL DEVELOPMENT PROCESS

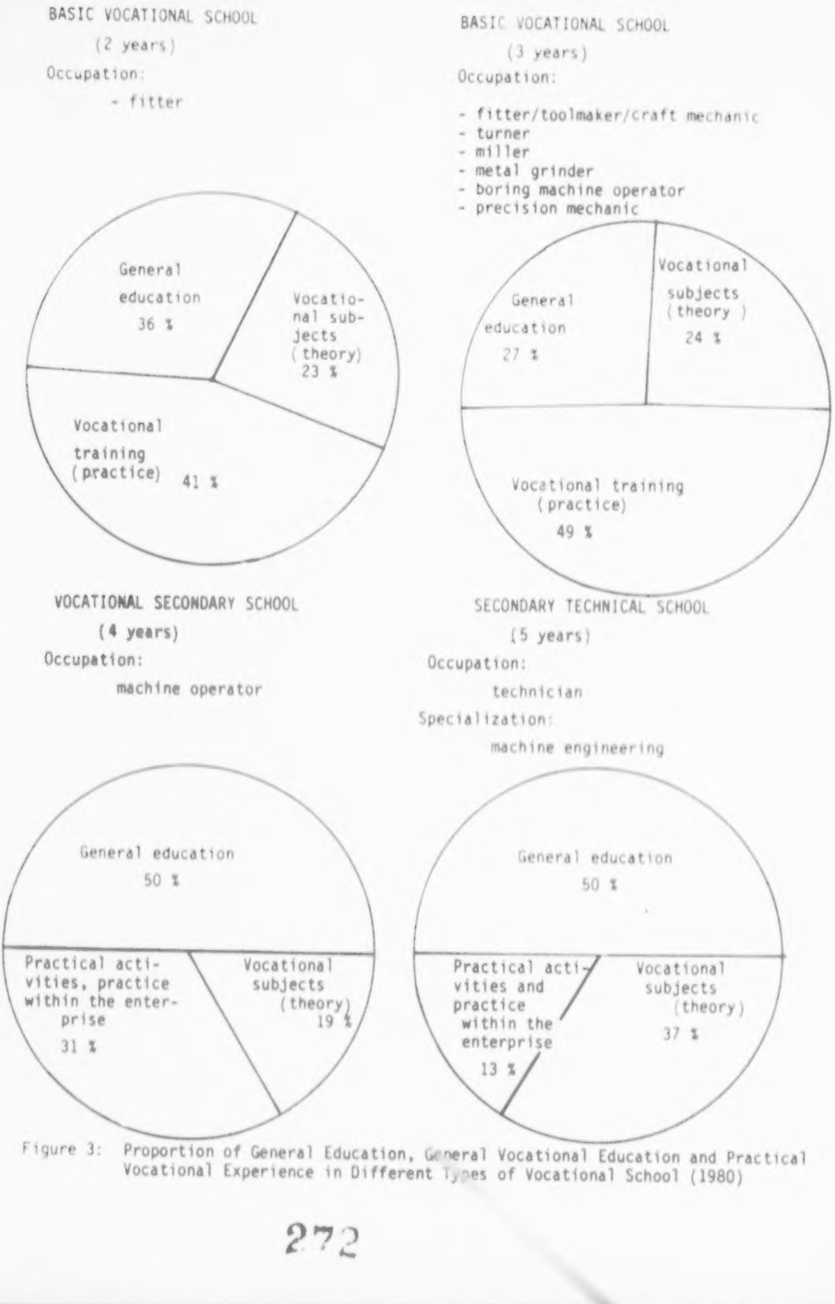
Vocational development in Poland has so far been described as a process which is continuously assisted by the system of formal and non-formal education, starting with first vocational awareness-type experiences in nursery school and progressing from prevocational curricula in primary school to vocational education on different levels in secondary school and finally to advanced vocational education, upgrading and retraining in programmes for adult learners.

All these programmes have certain salient features: a strong tradition in favour of general education has merged with the country's Marxist emphasis on education for work to form a sound basis for the integration of general and vocational education; practical work experience is highly valued in vocational education so that a substantial portion of the instruction time is spent on hands-on activities; and finally, teacher education for prevocational and vocational subjects is highly diversified, an aspect which has lately created considerable controversy.

5.1 The Integration of General and Vocational Education

An important feature of the present vocational education model in Poland is the fusion of three spheres of education, i.e. general, general vocational and practical vocational education. Yet there is no fixed proportion for the fusion. It differs according to the type of school, as shown in Figure 3.

In the curricula of basic vocational schools, general education subjects are built up on what has been taught in primary education. The level of achievement in Polish language, history, civic education, mathematics and physics attainable in the 2- and 3-year programmes approximates to that of students who have completed the 10th grade of general secondary schools. In order to reach this level the number of unit hours devoted to general education in the 3-year basic vocational schools amounts to 27



BASIC VOCATIONAL SCHOOL
(2 years)
Occupation:
- fitter

BASIC VOCATIONAL SCHOOL
(3 years)
Occupation:
- fitter/toolmaker/craft mechanic
- turner
- miller
- metal grinder
- boring machine operator
- precision mechanic

VOCATIONAL SECONDARY SCHOOL
(4 years)
Occupation:
machine operator

SECONDARY TECHNICAL SCHOOL
(5 years)
Occupation:
technician
Specialization:
machine engineering

General education 36 %
Vocational subjects (theory) 23 %
Vocational training (practice) 41 %
General education 27 %
Vocational subjects (theory) 24 %
Vocational training (practice) 49 %
General education 50 %
Practical activities, practice within the enterprise 31 %
Vocational subjects (theory) 19 %
General education 50 %
Practical activities and practice within the enterprise 13 %
Vocational subjects (theory) 37 %

Figure 3: Proportion of General Education, General Vocational Education and Practical Vocational Experience in Different Types of Vocational School (1980)

per cent, and in the 2-year schools to 36 per cent of the total number of hours.

In the 4- and 5-year secondary vocational schools this percentage is even higher. 50 per cent of the total number of hours are devoted to general education. These curricula of general education are very similar to those of general secondary schools.

According to the prevailing concept of education, general education subjects should be taught in vocational schools as a necessary basis for vocational preparation. General education develops students' ability for self-directed learning as part of vocational development and assists them in applying occupational, technological and economic information obtained from various sources and by various means. They also make it easier for students to understand technological processes and economics as well as the organization of manufacturing processes and the principles underlying them.

Another very important function of general education in vocational schools is the provision of access to higher education. The wide scope of general education in all types of vocational school ensures equal opportunities of higher education for the leavers of secondary vocational schools. Graduates from basic vocational schools who obtain the qualifications of skilled workers have the opportunity to continue education in secondary schools.

By general vocational education, the second sphere of education in Polish vocational schools, is to be understood theoretical instruction in vocational subjects. This instruction is increasingly based on broad-profile occupations and includes the latest achievements in science, technology, work organization and economics. Through this instruction new and better work methods are introduced. The students are familiarized with the problems of technological progress and they learn the theoretical background of their particular occupation.

The amount of instruction time spent on the theoretical part of vocational education differs according to the type of school and the occupational programme. It can be as much as 37 per cent of the total instruction time in the 5-year machine engineering programme, but may be as little as 19 per cent in the 4-year machine operator programme (see Figure 3).

Practical vocational education, the third sphere of education in Polish vocational schools, is emphasized through a variety of work activities in the schools and in out-of-school work environments.

Generally speaking, in all basic vocational schools half of the school hours, i.e. 3 school days weekly, are devoted to practical activities performed in workshops. In secondary schools, roughly one day per week is devoted to practical training.

The practical activities are of different types. Regarding the in-school activities one has to distinguish between practical and laboratory classes and vocational production practice proper. An important supplement to these types of instruction is a period of vocational practice in an enterprise, which familiarizes the students with modern production methods, with the application of technological processes and above all with a real work environment.

When the programmes of specialized education were developed, it was taken for granted that, complementary to the vocational preparation in the school, the period of practical training in an enterprise would make it possible for the school leaver to adjust to the conditions and demands of his future workplace. But experience has shown that this is not necessarily the case.

In-school practical experience ranges from approximately 15 per cent in some 4-year secondary technical vocational schools to as much as 49 per cent of the instruction time in basic vocational schools. Extracurricular activities include out-of-school practical experience; the time allocation ranges from 4 to 10 per cent of all instructional units.

A certain variance in the quality of practical training is partly due to the fact that some schools are attached to factories. In these cases the factories are responsible for the material resources of the training. The close linkage between factory and school usually has a positive influence on the quality of the programme.

On the whole the proportion of instruction time spent on hands-on activities is noteworthy. This feature is in line with the Marxist principle of combining practical work with theoretical learning. The priority attributed to the integration of general and vocational education is a direct consequence of this principle.

5.2 The Diversified Plan for Training Vocational Teachers

Teachers for prevocational and vocational subjects are trained in Poland by a variety of institutions. The high degree of specialization of vocational schools has resulted in a differentiated system of teacher education for these types of school.

Teachers of "Work and Technology" for the 8-grade primary school and the 4-grade general secondary school are trained in the technological departments of teacher training colleges. The "Work and Technology" subject itself includes a variety of technologies in the fields of woodwork, metalwork, plastics and electrical engineering. For this reason, teacher training curricula have to include various disciplines which are very complicated and difficult to teach in schools. It is therefore almost impossible to ensure high standards of teaching in every discipline and the teacher training curricula include too little pedagogical knowledge.

Although a sufficient number of teachers of "Work and Technology" are trained in Poland, there is a shortage of them in the schools. The reason is that some of them take on jobs in industry, working as a kind of general engineer since they are not specialized in any branch of engineering. Some teachers of "Work and Technology" are also employed by vocational schools. Recently a project has been proposed to establish a separate teacher training college for technology teachers of general secondary schools.

Teachers for vocational schools go through different types of training according to the subjects they will teach. Teachers of general education subjects attend the general teacher training colleges.

For teachers of theoretical vocational subjects training is provided by a number of specialized institutions of higher education. Thus teachers of technology are trained in Colleges of Technology or Technical Universities; agriculture teachers are trained in Academies or Colleges of Agriculture, and teachers of economics in Academies of Economics. In order to acquire the necessary pedagogical competence, the students of these institutions also complete a one-year education course.

Instructors for practical vocational subjects, who teach in workshops or supervise the students' vocational practice, are trained in specialized 3-year secondary schools with a vocational/technical as well as an educational programme. These schools admit the graduates of basic vocational schools, i.e. skilled workers. When they later work as instructors, they are given the opportunity of obtaining advanced pedagogical or advanced technological education in extramural types of school.

Considering that a certain number of vocational instructors are graduates of institutions of higher education who receive additional in-service training in the field of pedagogy, it becomes obvious that a wide variety of training programmes is offered to prevocational and vocational teachers. The main problem in these different programmes is to maintain a balance between the vocational and the educational training component.

6. SUMMARY AND CONCLUSIONS

The system of vocational preparation in Poland, as compared with those in other countries, reveals certain characteristic features. For instance, vocational preparation is to a great extent provided by the formal system of education, as it is in the majority of socialist countries. Of Poland it may be said that the proportion of time devoted to vocational and general education in different types of vocational school is balanced.

Another important aspect which receives high priority in Poland is access to higher education through promotional stages within the education system. In the vocational education system the principle is observed that there must be access from any programme to another higher level programme, straight up to higher education. The graduates from basic vocational schools can, for instance, continue their education in the 3-year secondary technical school without going back to the general secondary school or the 5-year secondary vocational school.

The importance of possibilities of in-system promotion is partly due to the fact that the level of entrance into the world of work is largely determined by the level of formal education completed. Therefore, a drift towards higher education diplomas is noticeable and secondary schools are gaining in popularity since they are the basis for higher education.

A serious problem of the vocational schools in Poland is the gap between the qualifications provided and those needed by the economy. The attempts of planners to define the number of specialists required for separate economic branches in 5-year plans within the state-controlled economy have not been very successful. In practice they have resulted in a shortage of workers in some branches and a surplus in others. Moreover, employers do not always place applicants in jobs commensurate with their vocational qualifications.

Finally, the whole system of vocational education was built on the principle of equality, according to which all children should be admitted, on the basis of achievement, to all types of school at all levels, including higher education. Equal chances provided by the system of education do not, however, necessarily result in equal chances for all groups of children. Country children in particular have in general fewer chances of attending higher-level schools than town children have. This was evident when Poland was making an attempt to replace the existing 3, 5 or 8-grade schools by highly differentiated 10-grade schools. Community schools of this type were established in rural districts. But as they had very large catchment areas, the children's journey to school was lengthened, means of transportation had to be organized, etc. Finally, it appeared that this organizational way of raising the level of school work resulted in lower attendance rates due to the impossibility of regular attendance by children living in distant villages. Instead of raising country children's opportunities, their chances as compared with those of town children were further lowered.

Country children are also disadvantaged in terms of the choice of vocational schools available to them. Towns, especially big towns, offer a full range of vocational specializations; town children can choose almost any specialization they like. Country children have only a restricted choice because of limitations in the network of vocational schools.

This study has attempted to describe the Polish system of in-school and out-of-school vocational education in its life span and life space perspectives. This system may be regarded as being characteristic of those countries which base their political system on the theory of historical materialism.

Appendix 1: Programme of Instruction
Secondary Technical School
Occupation: technical mechanic (6-2.01)
Specialization: machining
Age of candidates: 17-20 years
Education required: completion of the 2nd grade of general secondary school

No	Subject	Grade			Total number of unit hours per week
		I	II	III	
		Number of school weeks			
		30	30	30	
		Number of unit hours per week			
1.	Polish language	3	2	2	7
2.	Russian language	2	2	-	4
3.	History	2	-	-	2
4.	Rudiments of social sciences	-	-	3	3
5.	Mathematics	3	2	2	7
6.	Physics	2	2	-	4
7.	Chemistry	2	-	-	2
8.	Physical education	2	2	2	6
9.	Military training	2	-	-	2
10.	Engineering drawing	4	-	-	1
11.	Technical mechanics	2	2	-	4
12.	Machine elements	-	4	-	4
13.	Theory of machines	-	-	3	3
14.	Electrical engineering	-	2	2	4
15.	Industrial automatic control engineering	-	-	2	2
16.	Machine tools	-	2	2	4
17.	Cutting tools	-	4	4	8
18.	Machine tools	-	3	2	5
19.	Technical laboratory	-	-	3	3
20.	Work safety and labour legislation	-	-	2	2
21.	Industrial plant management	-	-	3	3
22.	Practical classes	6	6	-	12
	Total:	33	34	33	100
-	Classes in civic education	1	1	1	3
-	Optional classes	-	-	2	2
-	Vocational practice in grades 1 and 2 - each of 4 weeks' duration				
	Extracurricular activities				
-	Classes in family education	1	1	-	2
-	Second foreign language	2	2	2	6

The number of unit hours devoted to physical education and sports is determined by the Ministry of Education Regulations of Nov.25, 1971 (Dz.Urz.MOiSW nr B-16, poz.102)

Appendix 2: Programme of Instruction
Secondary Technical School
Occupation: clothing technician
Specialization: costume design (6-50.12)
Age of candidates: 17-20 years
Education required: completion of basic vocational school with school certificate of proficiency in one of the following occupations: man's wear tailor, dressmaker (summer wear), dressmaker (winter wear), making children's clothes, seamstress, shirt-maker

No	Subject	Grade			Total number of unit hours per week
		I	II	III	
		Number of school weeks			
		30	30	30	
		Number of unit hours per week			
1.	Polish language	3	4	3	10
2.	Russian language	3	2	2	7
3.	History	3	3	-	6
4.	Rudiments of social science	-	-	3	3
5.	Mathematics	4	3	2	9
6.	Physics	3	2	-	5
7.	Chemistry	2	2	-	4
8.	Physical education	2	2	2	6
9.	Military training	2	2	-	4
10.	Elements of work psychology	-	-	1	1
11.	Drawing	2	2	2	6
12.	Materials science	2	-	-	2
13.	Production engineering	-	4	2	6
14.	Model - making	6	6	12	24
15.	Work safety and labour legislation	-	-	1	1
16.	Industrial plant management	-	-	2	2
	Total:	32	32	32	96
-	Classes in civic education	1	1	1	3
-	Optional classes	-	-	2	2
-	Vocational practice in grades 1 and 2 - each of 4 weeks' duration				
	Extracurricular activities:				
-	Classes in family education	1	1	-	2
-	Second foreign language	2	2	2	6

The number of unit hours devoted to physical education and sports is determined by the Ministry of Education Regulations of Nov.25, 1971 (Dz.Urz. MOiSW nr B-16, poz.102)

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THE TANZANIAN CASE STUDY

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. PROFILE OF THE CASE STUDY

The Tanzanian case study discusses the dominant components of vocational development and community involvement in "Education for Self-Reliance", one of the most fascinating educational experiments of our times. Education for Self-Reliance provides the conceptual scheme for motivating and activating the Tanzanian people to build their own future as a self-reliant agrarian society. We experience a development strategy based on the vocationalization of education and the optimistic belief that education can build a new social order.

Education for Self-Reliance and its enforcement through the Musoma Resolution have resulted in the establishment of educational institutions which attempt to combine low-cost education with a motivational drive for the development of the country through effective vocational preparation. From the Tanzanian Ministry of Education and the Ministry of Labour, which share the responsibility for formal and non-formal education in the country, one institution each has been selected for in-depth study of the vocational aspects of Education for Self-Reliance: The Folk Development Colleges under the Ministry of National Education and the District Vocational Training Centres under the Ministry of Labour and Social Affairs. They are both portrayed here as part of the genuine Tanzanian effort toward self-reliance through education (see Table 1).

2. STAGES OF VOCATIONAL DEVELOPMENT

Curricula for vocational education in Tanzania do not follow a distinct differentiation into stages of vocational development. However, through Education for Self-Reliance as an overriding concept for all vocational programmes a variety of aspects of different stages of vocational development are implicit in the programme. Furthermore, the emphasis on linkages between the vocational programmes and real work environments

Table 1: Profile of the Tanzanian Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula from a rational system of formal and non-formal vocational education
Age Group Served	From 7 to 21 years of age and adults
Sponsor of the Programme	State-operated national system of formal and non-formal education under dual responsibility for voc. education: Ministry of Nat. Education and Ministry of Labour and Social Affairs
Intention of of the Programme	Vocational education as part of Education for Self-Reliance; the concept implies vocationalization of all parts of the education system
Specific Traits	Experience with useful work in real work environments emphasized in all voc. development programmes District autonomy over vocational programmes in District Vocational Centres to enhance education-community linkages

enriches the programmes beyond mere skill training with contents of awareness, systematization and experimentation. Such linkages are provided, for example, through work experience components and through district autonomy regarding the programmes of District Vocational Training Centres.

Particular aspects related to the stages of vocational development up to the level of employability are considered in the following analysis. Further training is only partly emphasized, and no emphasis is as yet placed on upgrading.

Vocational Awareness: Through the orientation towards "Self-Reliance" all training programmes are embedded in the overall development strategy of the country. Hence students are aware of the job opportunities which are favoured by the country before they enrol in training programmes. Thus vocational awareness in the context of manpower contribution to national development is widespread at all age levels in Tanzania though it is not particularly emphasized in the curricula for vocational development.

Vocational Systematization: Vocational systematization, if understood as the post-awareness elaboration of occupational categories such as vocational clusters and patterns of vocational aspiration, is only partly emphasized in Tanzania. This categorization is based on the perspective of how the individual could best serve the vocational needs of the country. Consequently, vocational systematization is largely restricted to the employment profile of the dominant agrarian sector of Tanzanian society.

Vocational Experimentation: The trial and error phase of vocational development is not considered to be a central part of Education for Self-Reliance. However, early work experience of children provides insight into abilities as well as the lack thereof. Reorientation of vocational choice in accordance with planned manpower requirements is not intended.

Employability: Skill preparation for employability is the ultimate goal of the training programmes which have been analyzed here. Due to the intensive utilization of out-of-school learning environments trainees are offered a gradual transition from education to work. Students can check to what degree they have become employable through self-appraisal in coping with work conditions at the place of employment.

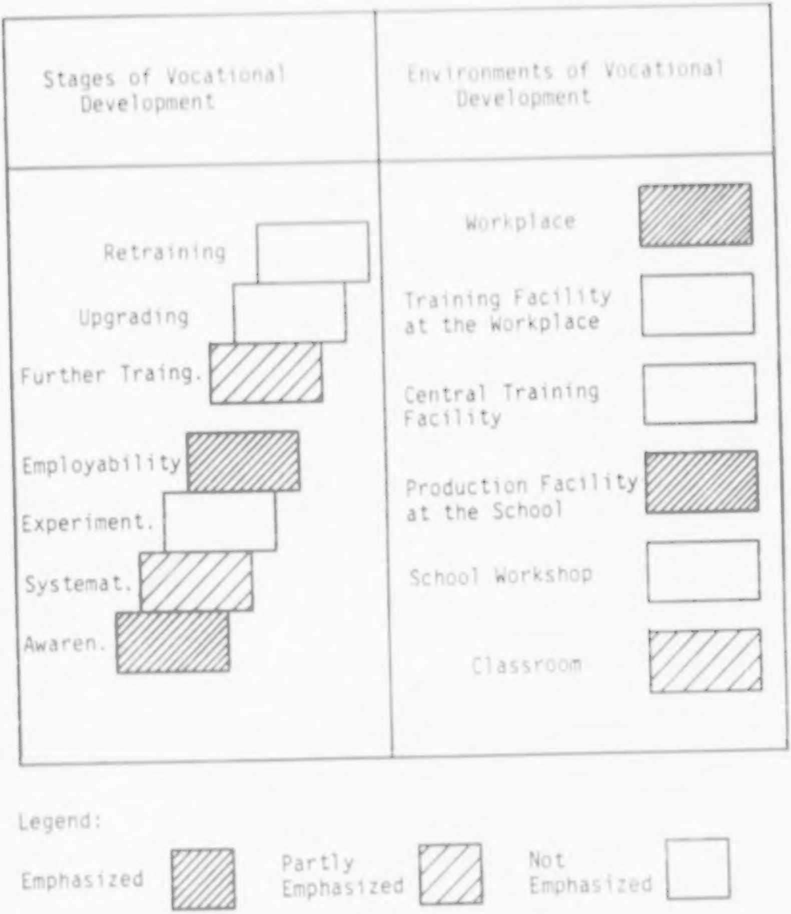
3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

The Tanzanian approach to the organization of learning experiences is based on the thesis that low-cost education need not be identical with low effectiveness of education. Tanzanian education adheres to two models of decreasing the costs of education through utilizing out-of-school learning environments, while it is claimed that these models strengthen at the same time the effectiveness of the training programmes:

First, intensive use is made of possibilities for on-site work experience as part of the training programmes. During the periods of work experience only limited teaching staff and no teaching facilities are needed. However, the students are engaged in economically useful work. On-site work experience is also an excellent means for learning how to cope in actual work situations. In terms of learning effectiveness this approach has to be preferred to the high cost simulation of real work situations.

Second, production units are attached to the schools, i.e. out-of-school work environments are incorporated in the school premises. It is expected that income is generated through these units to reduce the operational costs of the school. And, even more importantly, through work in these production units students can experience the whole complexity of different demands occurring in work situations while they are still at school. The production units also serve as excellent means of integrating the school with the community.

Hence, actual production-oriented experience at the workplace and productive work at production units of the schools form the two pillars of the design of environments of vocational development in the Tanzanian concept of preparation for work. However, in practice the full potential of these learning environments has not been utilized. Actual work experience can, for example, deteriorate into observation of work and a production unit can turn out to be a second rate school workshop or just a place of juvenile work without an educational function. It is a difficult task for the young Tanzanian system of education to avoid these pitfalls.


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment.
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the Tanzanian Case Study

4. DISTINCTIVE FEATURES OF THE CASE STUDY

By drafting the ambitious concept of Education for Self-Reliance and by attempting to operationalize this concept, Tanzania already assumed a lead among developing countries in the late sixties in the provision of quality education at low cost. No education system of an industrialized country had served as a model. Instead a genuine approach was developed for the country and closely integrated with its overall goals of development.

The integration of educational development with development in the other subsystems of society, such as the economic and the technological system has to be viewed as the core of a strategy for social development.

Education for Self-Reliance is not only the overriding concept for Tanzanian education, it is also its motto. The ultimate goal of all training programmes is to enhance the self-reliance of Tanzanian people. In this respect Tanzania is addressing a paramount problem of developing countries.

Following upon Tanzania a number of developing countries have introduced production units in their education systems. It is the promise of production units to combine valuable work experience with cost-saving measures in the education system, since money raised through selling the products of the production unit can be used to offset part of the costs of education.

Next to the production units the self-containment of all levels of the education system is another outstanding feature of comprehensive vocationalization in Tanzania. Contrary to former tendencies of overemphasizing the academic values of education and advocating advancement through all the levels of the education system, these levels have been restructured into self-contained entities of terminal education. Consequently "employability" and not "access to further education" is seen as the aim of all phases of education. And finally it is remarkable that the community is given some authority over the schools, an approach which ensures better responsiveness of the schools to the actual needs of the world around them. At the same time this measure strengthens the vocational orientation of the education system and adds further meaning to the approach of terminal education on each level of the system.

Over the past years Tanzania has met tremendous problems with the implementation of its ambitious development strategy. It calls for careful evaluation to find out which traits of the system can stand the test of history.

IN-SCHOOL AND OUT-OF-SCHOOL CURRICULA FOR VOCATIONAL DEVELOPMENT IN TANZANIA

by

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Tanzania

1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT

1.1. Geographic and Demographic Situation

Tanzania is situated on the east coast of Africa and covers an area of 945,000 sq. kilometres, including 59,050 sq. kilometres of inland water. It is bordered by Kenya and Uganda in the north, by Zaire and Burundi in the west and by Malawi, Zambia and Mozambique in the south. Though it is a country of big plains and plateaus, Tanzania has the highest mountain of Africa, the 19,340 feet snow-capped Mount Kilimanjaro. The climate in the coastal belt is hot and humid - the mean temperature in Dar es Salaam is 25.7°C with humidity ranging between 79 and 82 per cent. Further inland, as the plateau rises, both humidity and temperature decrease.

The people of Tanzania, an overwhelming majority of whom are Africans, are composed of some 126 ethnic groups speaking more than 120 different languages and dialects. In spite of this diversity, these groups are unified by the Swahili language, which is both the official and the national language. At independence (1961), Tanzania had a population of about 9 million people. At the census in 1978, the total population stood at 17.5 Million.

1.2. Historical Background and Socio-Economic Structure

The United Republic of Tanzania was founded in April 1964 when Tanganyika, independent from British rule since 1961, merged with Zanzibar, which had been a sultanate but became a republic in 1964. The executive power is vested in the President, and there is a national assembly with legislative functions. The country has opted for socialism as the way of organizing society. The blueprint for Tanzanian socialism is the 1967 Arusha Declaration, which proclaims six basic principles essential for socialist development:

- a profession of faith in man,
- rejection of the exploitation of man by man,
- control of the major means of production and distribution by workers and peasants,
- the existence of democracy,
- socialism as a belief and a way of life,
- a policy of self-reliance; socialism is impossible if the people have not gained their self-confidence and become self-reliant.

Economically, Tanzania is an agricultural country. In 1983, for example, agriculture accounted for 52 per cent of the GNP and more than 75 per cent of export earnings and provided a livelihood for nearly 90 per cent of the population. The GNP per capita (1983) was US$ 240.

Main exports include coffee, cotton, sisal and diamonds while machinery, manufactured goods, transport equipment, fuel and foodstuffs are the main imports. In the long-term industrial development strategy (1975-95) the use of local resources for domestic needs is given high priority.

These economic conditions and the principles of the Arusha Declaration mentioned above form the base from which the direction and driving force of the educational system has been derived.

1.3. Outline of the Education System

Two ministries are responsible for the formal and the non-formal system of education: the Ministry of National Education and the Ministry of Labour and Social Welfare. The Ministry of National Education is responsible for primary, secondary, higher and adult education and teacher training. The Ministry of Labour and Social Welfare is responsible for vocational training and workers' education. Primary and adult education are largely decentralized; the main control over these units is executed by the local authorities. Due to the principle of terminal education at all levels (see below) the vocational emphasis is dominant even at the primary level. Thus, the responsibilities for vocational development are fully shared by both ministries.

Besides these two ministries the Churches and Missions play an important role in vocational training. Furthermore, the

Tanzania Parents Organization (WAZAZI), the cultural mass organization of the ruling party Chama Cha Mapinduri (CCM), is also very influential in the field of vocational development.

Nevertheless, the major part of vocational skills is still being developed in the informal sector of Tanzania's crafts and agriculture.

During the early years after independence, uniform curricula geared towards the fulfilment of manpower requirements were introduced. Further, new policies regarding education were defined by the Arusha Declaration and in particular by President Nyerere's famous policy paper on *Education for Self-Reliance (ESR)*. This paper became the basis of all major educational changes in the country.

The two main goals of 'Education for Self-Reliance' (of the Tanzanian people) were stated as follows:

- to equip learners with knowledge, skills and attitudes required for tackling social problems, and
- to prepare young people for work in Tanzania's predominantly agricultural society.

To implement the concept of Education for Self-Reliance, the 1969 Education Act was passed and the state party, CCM, reviewed the progress made. As a consequence of this reviewing process the so-called *Musoma Resolution* was passed in November 1974. This Resolution emphasized the vocational aspect of the education system. It stressed the necessity for the government to ensure that education would be integrated with work. Through this integration with work, education is expected to produce truly self-reliant people who are ready to play their part in the development of their society. The resolution states that education at any stage should be terminal and not merely a preparation for the next higher level of formal schooling. Even primary education should be complete in itself, preparing pupils for life in the predominantly rural communities. Secondary education should have the function of imparting to the young skills that could enable them to enter directly the various middle level sectors of the national economy.

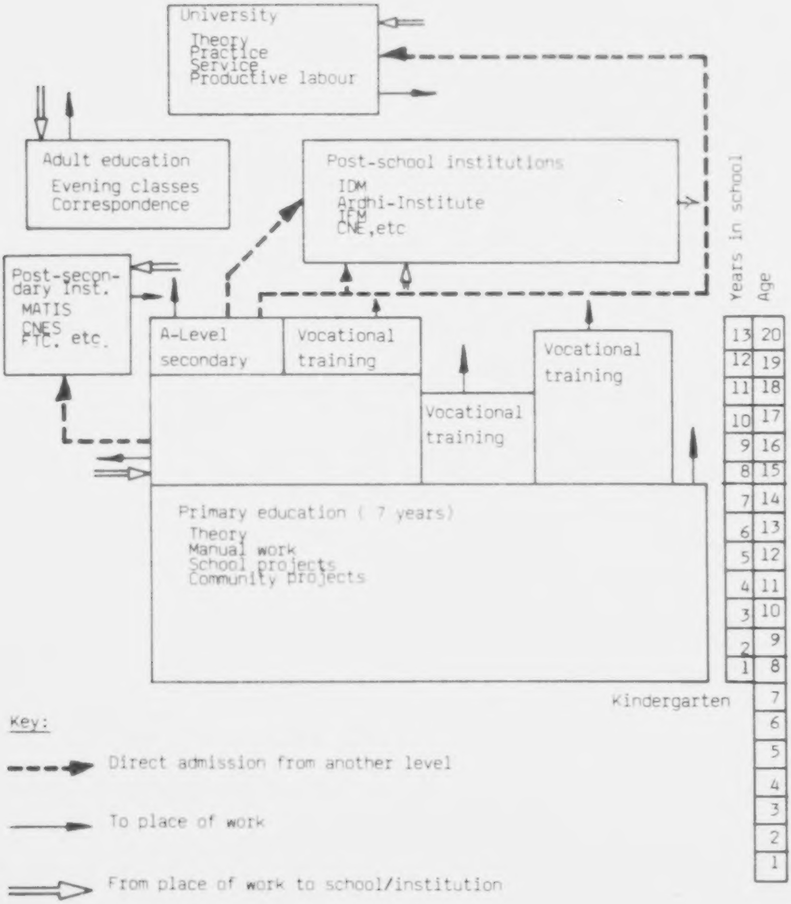
Regarding universities and other institutions of higher education, the Musoma Resolution requires that after national service school leavers must work for at least two years before they can apply for higher education. However, admission procedures require not only high academic qualifications but also good character references from the candidate's employer and the local party branch.

This vocational emphasis also applies to adult education. A special Workers' Education Directive was issued in 1973 because it was felt that workers had for a long time lagged behind in profiting from public education. Hence, workers' education programmes designed to involve all workers were initiated, starting with literacy programmes and providing means for further education even up to the level of university programmes.

Altogether the work orientation of the education system with its means of access from work to education and vice versa was emphasized. Figure 1 demonstrates the links between places of education and work.

The following abbreviations must be known to understand Figure 1:

MATIS - Ministry of Agriculture Training Institutes
CNE - Colleges of National Education
FTC - Full Technician Courses (Technical Colleges)
CNE - Colleges of National Education
IFM - Institute of Finance Management
IBM - Institute of Development Management


University
Theory
Practice
Service
Productive labour
Adult education
Evening classes
Correspondence
Post-school institutions
IDM
Ardhi-Institute
IFM
CNE,etc
Post-secondary Inst.
MATIS
CNES
FTC. etc.
A-Level secondary
Vocational training
Vocational training
Vocational training
Primary education (7 years)
Theory
Manual work
School projects
Community projects
Kindergarten
Years in school
Age
Key:
Direct admission from another level
To place of work
From place of work to school/institution

Source: G. Mmari, *Directive on Implementation of Education for Self-Reliance*, Dar es Salaam: University of Dar es Salaam, 1975, p. 20.

Figure 1: Structure of the Tanzanian Education System with Emphasis on Linkages between School and Work.

2. VOCATIONAL DEVELOPMENT IN THE CONTEXT OF EDUCATION FOR SELF-RELIANCE

2.1. Historical Background of Education for Self-Reliance

Education for Self-Reliance has become known as the unique Tanzanian way of establishing and developing an education system geared towards the needs of the country. The foundation of this system with its strong vocational emphasis has to be viewed as the result of a historic process of changing the colonial system of education to a system in accordance with national needs.

Before independence was obtained in 1961 the education system was organized along racial lines with Europeans, Asians and Africans served not only by separate schools but also by separate school boards and systems of educational finance. The smallest share went to African education. Some characteristics of the educational system at independence are demonstrated in Table 1.

The first move of the independent Government was, therefore, the introduction of the 1961 Education Ordinance which sought to improve educational provision throughout the country. The ordinance (*Laws of Tanganyika*, 37, 1971) introduced two major administrative arrangements: first, the integration of educational provision by abolishing former racial divisions and establishing a single system of national education, and second, the delegation of responsibility for primary education to local authorities.

Following the new regulations educational developments between 1961 and 1967 were mainly characterized by the objectives of maximizing the growth of the economy within the framework of industrialization. The aim was to attain self-sufficiency in local manpower by 1980. As a result of the identified shortage of educated manpower, the middle and high level educational programmes claimed the lion's share of the education budget. Unfortunately these programmes turned out to be still

Table 1: School Enrolment Compared to Total Population Before the Introduction of the 1961 Education Ordinance

CHARACTERISTICS	AFRICANS	ASIANS	EUROPEANS	TOTAL
1. Ethnic groups	9,281,000	117,200	22,700	9,420,000
as a % of total population	98.5 %	1.2 %	0.3 %	100 %
2. Total pupil enrolments	512,291	27,288	2,557	542,136
a) Low. Prim.	450,644	11,844	1,347	463,834
b) Upper Pr.	55,616	10,043	823	66,432
c) Secondary	6,031	5,401	387	11,819
d) Techn./Vocat.	1,386	525	54	1,965
3. Teacher traing.	1,698	50	-	1,748
4. a) Teachers (total)	9,521	971	156	10,648
b) Teachers with university ed.	191	399	59	649
c) Teachers with secondary ed.	1,107	470	96	1,673
d) Teachers without second. ed.	8,223	102	1	8,326
5. Total Ed. Expenture in £ (1960)	4,950,388	632,200	424,965	6,007,553
6. Teacher/Pupil ratio	1:54	1:28	1:16	1:51
7. Expenditure per Pupil in £ (1960)	10	23	166	11

Source *Annual Report*, Statistical Abstract.
Dar es Salaam, Tanzania: Department of Education, 1961

predominantly elitist and rather academic in nature. Furthermore, there was a growing realization that the development strategy followed soon after independence (up to 1966) could not provide the basis for a self-sustained growth of the economy. Industrialization proved to be highly capital-intensive and its expansion was hampered by a sluggish agriculture, the growth of which was impeded by unfavourable world market prices.

The imbalance among the various income classes and the emergence of an indigenous elitist class plus other related issues made it necessary to re-assess the nation's concept of an alternative social order and to formulate a new strategy for economic development. The 1967 Arusha Declaration adopted in February of that year unambiguously committed Tanzania to the ideals of equality, socialism and self-reliance and gave rural development a central place in the achievement of these goals. The subsequent adoption of the policy on 'Education for Self-Reliance' in March 1967 completed the framework of major policy issues by outlining the orientation marks for the development of the education and training system.

This new concept of education may be described as work-oriented, activity-based and altogether geared to the needs of the Tanzanian economy.

2.2. The Vocational Orientation of Education for Self-Reliance

In the concept of Education for Self-Reliance the vocational dimension is dominant. This is evident from the following main elements:

- Students who complete primary or secondary education should be able to contribute directly to the development of their communities. To achieve this end education at both levels has to include a complete training programme.
- Education should be rooted in production so that schools can contribute to self-sufficiency and become integrated into the local community.
- Education should stimulate creativity within a context that emphasizes practical skills and science.

- Examinations should be downgraded in their function as selection for secondary and university education: instead education should include an assessment of commitment to and experience of work.

- Educational provision should be for the masses rather than for the elite.

Three out of these five main elements of Education for Self-Reliance refer directly to education for work, while the first and the fifth element emphasize the role of vocational education implicitly. The implementation of these elements can, therefore, be interpreted as the vocationalization of the whole education system.

Education for Self-Reliance could only be introduced through major changes in the organization of the formal and the non-formal system of education and of the contents of the programmes. A number of resolutions were passed to safeguard this development. In particular they were concerned with work-related changes in school terms and timetables, in teacher training, school-community cooperation and in the function of primary education.

- School terms and timetables were changed in order that full use could be made of the agricultural seasons. The previous timetables had reflected the needs of an academic-oriented curriculum and did not provide an appropriate opportunity for participation in gainful activities. Now that schools were to develop farming as an occupation, adequate time for farm work had to be provided and school terms had to be so arranged as not to coincide with agricultural seasons.

- Teachers in schools, both natives and expatriates, needed orientation to the new challenge: most of them had been trained for academic institutions whose measure of effectiveness was pupil performance in written and oral examinations. Now they were expected to participate in production activities to comply with the concept of Self-Reliance. The curricula for teacher training had to be changed accordingly.

- The prevailing attitude of schools before the introduction of Education for Self-Reliance had been one of detachment from the concerns of the community. This attitude had to be combated through the introduction of various schemes of school-community integration. Methods which were recommended included school participation in self-help projects and literacy campaigns, the opening of school facilities, especially of the production units, to the public and intensified parent/teacher contacts.

- More important, however, was a re-orientation of primary schools. Their designation was changed from 'primary' to 'basic' with the intention of redirecting the expectations of parents and pupils. A pupil attending 'primary school' is more likely to aspire to secondary and tertiary levels of education, whereas 'basic school' ("shule ya Msingi" as it is called in Kiswahili) implies preparation for life in the community. Furthermore, the final examination at primary school level was changed from General Entrance Examination to Basic School Leaving Examination to stress its terminal character. The school entry age was raised to 7 years and above so that after 7 years of schooling the young school leavers would have reached the age of 14 and could participate in hard agricultural work.

But the main thrust of change was aimed at the curricula in primary and secondary education. With employability as the central goal for graduation from 'basic' as well as from secondary school a complete cycle of vocational development from vocational awareness through job preparation had to be incorporated into the curricula.

Vocational awareness was stimulated by explaining to the students and their parents why the creation of productive citizens was the central vocational goal of Education for Self-Reliance.

Vocational systematization was provided in the restricted area of the range of occupations pertaining to the agrarian sector of Tanzanian society. Some vocational experimentation could also be undertaken in the production units attached to the schools. These units were established to provide real work experience, but they were not intended to serve as training sites for specific occupations. They will be dealt with in more detail later.

Employability was to be achieved in an occupation actually needed for a self-reliant Tanzanian economy. Usually this part of training would be offered in the school's production unit and through work experience programmes.

These reforms were hampered at the primary level by the lack of qualified teachers and the overcrowding of schools. At the secondary school level, however, the reforms resulted in what is now commonly known as 'the diversification of secondary education'. The programme envisaged that each secondary school would opt for one among four practical biases: technical-industrial occupations, agricultural occupations, commercial occupations and domestic science occupations. A student completing the secondary school cycle at one of these specialized schools should have sufficient skills to be of immediate use to the community. Alternatively, those going on to further education should also have the necessary academic orientation to be able to follow university education effectively. In a specialized secondary school, one third of the teaching time would be spent on vocational education and the remaining two-thirds on general subjects.

The vocationalization of school curricula had a strong impact on school-community cooperation. It has already been pointed out that schools were expected to develop a positive relationship with the surrounding community. This was intended to be achieved mainly through serving the local economy. There were even attempts to let the community participate in the planning and implementation of school curricula. A notable case study was that of the Kwamsisi Project (Moshi 1976). Kwamsisi is an Ujamaa village which was selected in 1971 as the first community where the idea of integrating education with the community was to be developed. By 1973 a tentative curriculum had been drawn up by the joint efforts of the villagers, the teaching staff of the Kwamsisi Primary School and itinerant teacher educators.

It has been reported that the new 'Basic School' is quite adaptable to the novel role of preparation for employment in priority areas of the community. The evaluation of the Project showed that 'integration of the school with the village has brought new insights for the villagers into the true nature and purpose of education and the teachers likewise are getting to know the true needs of village life'. (Moshi 1976, p. 117)

2.3. The Musoma Resolution and the Enforcement of Vocationalization

The drastic changes involved in the introduction of Education for Self-Reliance could not always be achieved in a smooth transition process. In some cases change had to be enforced against the wishes of the students and parents; in some cases the change process failed.

In 1974, the National Party met at Musoma for a conference to assess the progress made so far. It was felt that the task of making work an integral part of learning and study had not been pursued vigorously enough. Wrong attitudes still persisted to the extent that students did not feel obliged to work during their vacations and that parents did not encourage them to do so. In the so-called Musoma Resolution the party conference therefore singled out three major issues to be tackled by the education system:

- Curricula should be restructured to ensure that all coursework would be combined with productive work.

- Results of written examinations should be deemphasized in determining the success or failure of a student, and his attitudes towards work and work performance should be assessed instead.

- Admission to higher education should not be granted solely on the basis of intellectual ability; after completion of secondary education the student should go through a period of productive work in order to demonstrate his commitment to serving the people.

The Musoma Resolution made it clear that the Government fully endorsed Education for Self-Reliance. Employability in the Tanzanian economy had become the ultimate aim of all programmes of the formal and the non-formal system of education. The Musoma Resolution was based on the insight that since not all the Tanzanian people would voluntarily strive for this goal, a certain degree of enforcement was necessary.

2.4. Establishing the Preconditions for Lifelong Vocational Development

The combined effects of the directive on Education for Self-Reliance and the Musoma Resolution of 1974 have resulted in a comprehensive vocationalization of all educational programmes and in the establishment of a firm relationship between education and employment. Altogether, six major innovations were introduced as the basic framework of Education for Self-Reliance. These innovations have created the preconditions for lifelong vocational development. They are as follows:

Universal (Compulsory) Primary Education had been introduced by the Musoma Resolution as the natural and logical counterpart to the adult literacy campaigns. Mass literacy of the young was to be achieved and the incorporation of prevocational and vocational education in the curriculum of the basic school was meant to guarantee employability of the graduates and to reduce the running costs of the school by means of production activities.

For graduates from basic schools the possibilities of receiving vocational training were expanded through the establishment of *Post-Primary Technical Centres* (PPTCs) and *District Vocational Training Centres (DVTCs).* These training centres give graduates from basic schools the chance to develop further their vocational skills in a range of occupations.

Through functional training *adult neo-literates* should further develop their skills in different occupational fields such as modern methods in agriculture, hygiene, nutrition, etc. This approach should encourage the participants of literacy programmes to use their newly acquired abilities in reading , writing and calculating for improving their lives through work activities.

The *multi-purpose Folk Development Colleges* provide opportunities for training in village skills and crafts, especially for adults who have attained the required level of literacy. Primary school leavers may also attend these colleges.

The *diversification of secondary education* is meant to impart to the students prevocational skills and vocational skills in technical fields, agriculture, commerce and home economics, so that the graduates will be directly employable.

Finally, *changes in selection procedures* for university entrance and in assessment procedures elsewhere aim to marry academic performance and a positive attitude towards practical work. Higher education should no longer be a stepping stone for the elite, but an education to serve the development of society.

3. STAGES OF VOCATIONAL DEVELOPMENT AS MONITORED BY THE MINISTRY OF EDUCATION AND THE MINISTRY OF LABOUR

The roots of Education for Self-Reliance can be sought in precolonial times, when the acquisition of indigenous skills was in balance with the need for certain types of craft in the Tanzanian villages. Vocational training in precolonial Tanzania was informal, based on the family, the village community and the neighbouring villages. The training provided served the needs of the community. It took place in the way of education by doing and by observing what the elders did. This type of education was reinforced by the cultural, social and economic conditions of those times. For example, cottage industries such as pottery, production of coloured straw mats, blacksmithing, woodwork, metalwork, leather tanning, bark cloth weaving and spinning existed in Tanzania before colonization.

The first attempt by the colonial government to assume responsibility for vocational training can be traced back to the 1930s when trade training was first launched by establishing trade sections within a few Government Secondary Schools. Boys leaving the six grade primary school were offered five years' schooling in a combination of trade and academic education. But the programme eventually tapered off and was finally given up when it was decided to make the secondary schools purely academic institutions.

Another vocational training programme under the colonial government was introduced when the Overseas Food Corporation established a trade school for the training of craftsmen to be employed in the Groundnuts Scheme at Ifunda. When the Overseas Food Corporation collapsed, the school was converted into a craft training facility of the Ministry of Labour.

The next development of vocational schools derived from the 10-year plan of the Ministry of Education of the fifties, which provided for the establishment of a number of trade schools, one of them at Ifunda and one at Moshi. In these schools youths who had completed eight years of schooling were trained in various trades to the standard of skilled artisans. The plan proposed that by the end of 1956, 600 students would be enrolled at Ifunda and by 1959 another 600 at Moshi. But this target was never achieved. In 1957 the total number of trainees was 555 and by the mid-sixties the schools were phased out because the report written by the Ford Foundation had concluded that the skills imparted by the schools were obsolete.

Although these experiments with training programmes during the colonial time were largely unsuccessful they foreshadowed the dual responsibility of the Ministry of Education and the Ministry of Labour for the operation of vocational programmes which persists in Tanzania today.

The Ministry of National Education and the Ministry of Labour and Social Welfare now work together within the framework of Education for Self-Reliance. Due to the increasing vocationalization of curricula the Ministry of Labour and Social Welfare is gaining influence in the education sector, though its main responsibility is restricted to skill training. Prevocational and vocational programmes from primary through adult education remain the responsibility of the Ministry of National Education.

3.1. Vocational Development Programmes of the Ministry of Education

The most notable achievement of the Ministry of National Education has been the introduction of universal primary education which, due to the vocational bias of this programme, is synonymous with universal work orientation for this level of education. In this process enrolment in primary (later 'basic') schools grew from 471,000 in 1961 to 3.2 million in 1979 with about 92 per cent of the age group 7 to 13 attending school. At the same time the function of secondary education was changed from preparation for the university to a diversified vocational programme. Numerous programmes in adult education which emphasize the work orientation of public education in Tanzania were also introduced.

3.1.1 Prevocational Curricula in Primary Education (Age Group 7 to 14)

In line with the goals of Education for Self-Reliance the expansion of enrolment in the primary cycle of education has resulted in an increased awareness among Tanzanians of the vocational aspects of life and the role of education in preparing for them. The major objective of primary education in Tanzania is to provide the pupils with an education which is complete in itself, which inculcates in them a sense of commitment to their communities and helps them to accept the values appropriate to the future of their country. Although the emphasis in this first cycle of education is on the mastery of the three R's, due weight is placed on preparing the pupils for life in their villages where most of them will spend their adult years.

Included in the primary school programme are the subjects crafts and home economics. Home economics is taught to both boys and girls with the aim of imparting to them the knowledge and skills needed for the domestic activities of an ordinary Tanzanian home. The teaching of crafts is intended to serve as the basis for earning a living.

Of particular importance to Tanzania is the development of prevocational curricula in primary education as a means of creating awareness of traditional crafts and modern technology. Indigenous vocational skills were not integrated in the programmes at the time education was formalized. Furthermore the technical backwardness of the rural countryside means that children are not exposed to technology at home. This leaves primary education as the only means of initiating the young into technology.

The arts and crafts syllabus is intended to develop the manual and the creative skills of children right from first grade onwards. The programme is offered at an average of three periods per week extending over the entire cycle of primary education. The focus of the programme is on the development of the pupils' creative skills without requiring them to achieve a high degree of vocational proficiency. Typical skills learnt include basic carpentry and clay pot making as well as painting, making of food covers and baskets and production of other household decorations.

Natural science, a third subject in primary education, is partly devoted to vocational contents. It has been combined with agricultural science to emphasize its applicability to the predominantly agricultural work environment in Tanzania. The overall timetable in the basic school is shown in Table 2.

3.1.2 Vocational Curricula in Secondary Education (Age Group 15 to 21)

At the secondary level of education, the emphasis lies on meeting the manpower requirements of the economy, which is considered to be a necessary condition for economic growth. This policy implies that the number of students admitted to secondary education and the subjects taught should reflect economic planning.

Within this policy framework, secondary education extends over a period of six years after completion of seven years of primary education. At the end of the fourth year (grade 11) the National Form IV Examination, which is equivalent to the East African Ordinary Level Certificate or G.C.E. 'O' Level, marks the end of lower secondary education. Subject to the number of vacancies available those who pass this examination are enrolled in form V (grade 12) of higher secondary education at the age of 19. After two years of study the National Form VI Examination terminates higher secondary education. The certificate awarded to successful candidates is equivalent to G.C.E. 'A' Level.

Regarding the goals of learning, secondary education is another area where the diversification of formal education and the intensity of exposure to practical work has resulted in a different skill composition of the graduates.

There are four stated major aims of the secondary diversified/vocationalized programme:

- emphasizing manual work in accordance with the social and economic needs of the country,

- preparing pupils for work in the villages and towns,

- guiding students to an appreciation of the importance of manual work,

- marrying theory and practice.

Table 2: Timetable of the Seven-Year Basic School

	CLASSES AND PERIOD ALLOCATION			
	GRADES			
PERIODS	I/II	III/IV	V/VI	VII
1. Kiswahili	12	9	7	6
2. Mathematics	8	7	7	8
3. Art	4	3	3	3
4. Handicraft	1	1	2	2
5. Home Economics	1	2	2	2
6. Science/Agro-Sc.	-	2	4	4
7. English	-	4	5	5
8. Geography	-	2	2	2
9. Political Educ.	-	1	2	2
10. Religion	2	2	2	2
11. History	-	-	2	2
12. Physical Educ.	2	2	2	2
Tot. Periods p. Week	30	35	40	40
Tot. Periods p. Day	6	7	8	8

Source: Ministry of National Education, Dar es Salaam, n.d.

The teaching methodology includes periods of practical work in workshops and self-reliance projects. The emphasis is on basic principles of operation, design and product development.

Tables 3 and 4 show the timetable for the four years of lower secondary education (grades 8 to 11). The table for Forms I and II (grades 8 and 9) applies to all students regardless of their vocational orientation.

Table 3: Timetable of Forms I and II (Grades 8 and 9) of Secondary Schools (All Specializations)

FORMS I AND II (Grades 8 and 9)

		SPECIALIZATIONS			
	SUBJECTS	AGRI-CULTURE	HOME ECONOM.	COMMERCE	TECHNICAL
Compulsory Subj.	Political Education	2	2	2	2
	Kiswahili	3	3	3	3
	English	5	5	5	5
	Mathematics	6	6	6	6
	Biology/Health Sc.	3	3	3	3
	Geography	3	3	3	3
	History	2	2	2	2
	Chemistry	3	3	3	3
	Physics	3	3	3	3
	Religion	2	2	2	2
	Home Economics*	-	8	-	-
	Agricultural Sc.	8	-	-	-
	Commerce	-	-	8	-
	Technical Subj.	-	-	-	12
	Total periods per week	40	40	40	44
Option. Subj.	Physical Education	3	3	3	-
	Foreign Languages	3	3	3	-
	Music	3	3	3	3
	Art/Woodw./Metalw.	3	3	3	3
	Home Economics*	3	3	3	3
SELF-RELIANCE PROJECTS		10	10	10	10
GAMES & SPORTS		2	2	2	2

* Home Economics is compulsory for girls in forms I and II but optional for boys

Source: Ministry of National Education, Dar es Salaam, n.d.

In forms III and IV (grades 10 and 11) vocationalization is intensified; close to half the instructional time is devoted to the chosen vocational specialization. The timetable of a secondary school specializing in Technical Subjects is presented as an example in Table 4.

Table 4: Timetable of Forms III and IV (Grades 10 and 11) of a Technical Secondary School

GROUP	SUBJECTS	PERIODS
Compulsory Subjects	1. Technical Subjects	19
	2. Political Education	2
	3. Kiswahili	3
	4. English	5
	5. Mathematics	6
	6. Physics/Engineering Science	4
	7. Chemistry	4
	8. Religion	2
	Total number of periods per week:	45
Optional Subjects	9. Biology	4
	10. Art	3
	11. Teaching Methods	2
	12. Music	3
	13. Physical Education	3
	SELF-RELIANCE PROJECTS (HOURS)	8
	PHYSICAL EDUCATION (HOURS)	2

Source: Ministry of National Education, Dar es Salaam, n.d.

Technical Subjects in three different courses are offered and each student has to select one of them, as shown in Table 5.

Table 5: Courses Offered in "Technical Subjects" Schools

COURSE	SUBJECTS
A) Mechanical Engineering:	- Auto-Mechanics - Fitting and Turning - Welding, Metal-Fabrication and Foundry
B) Civil Engineering:	- Plumbing - Blockwork/Masonry - Carpentry and Joinery
C) Electrical Engineering:	- Electrical Installation

3.1.3 Compulsory Work Experience Required for Admission to Higher Education (Age Group 22 and above)

At the tertiary level, education in Tanzania is characterized by a heavy emphasis on professional and vocational studies. Entry into the university is guided by the 1974 Musoma Resolution, which requires that school leavers must work for at least two years before applying for higher education. The essence of Education for Self-Reliance is that work is an integral part of learning and study is a part of work. Graduates of secondary schools are given the opportunity to combine theory with practice. Attitudes such as claiming a right not to work until they complete their studies are discouraged. A candidate can only qualify for higher education if he can show evidence of both intellectual ability and proven commitment to serving the people. Enrolment requirements include not only high academic qualifications but also good personal references from the candidate's employer and the local party branch.

These attempts to link education with work are in line with the African tradition. "In traditional African societies everybody was a worker. There was no other way of earning a living for the community. Even the elder, who appeared to be enjoying himself without doing any work and for whom everybody else appeared to be working, had in fact worked hard all his younger days". (Nyerere 1966, p. 164-5)

The number of girls in institutions of higher learning had dropped significantly after implementation of the Musoma directive. They are now allowed to begin higher education after one year of National Service.

3.1.4 Vocational Curricula in Adult Education (Age Group 15 and above)

Three types of non-formal programme in adult education are offered in Tanzania. The first type of programme is devoted to the eradication of illiteracy, which went down from 75 per cent in 1961 to 21 per cent in 1981. Secondly, post-literacy programmes are offered for the newly literate adults and, finally, specific courses for adults from sponsoring villages are conducted in the Folk Development Colleges. This last type will be examined for this study.

Folk Development Colleges (FDCs) are rural training institutions which provide adult learning for effective development. Arising directly from the mass campaigns, the FDCs offer the neo-literates the opportunity to apply their general skills to more specialized courses in agriculture, local trades, accounting and home economics. The first project was launched in 1975; to date there are over 50 FDCs in Tanzania.

Selection for a FDC is a collaborative task of the FDC authorities, the district and the home village of the candidate, which sponsors the training. The training needs of the village are the main guiding factor. The candidates who have been selected for training are required to return to their village after completion of the programme. The training they receive is not intended to be used for paid employment in towns.

The length of courses varies from a few weeks to six months for short-term courses while long-term courses may extend up to two years. The short-term courses are designed for competency in limited subjects such as poultry keeping, horticulture or pig keeping. Long-term courses are offered in complex skill training areas such as motor mechanics.

During the calendar year 1979, the total number of student weeks per FDC averaged 1,200, which corresponds to 29 students for 40 weeks. The 1978 annual report gives the total proportion of participants in short-term courses as about 91.5 per cent and in long-term courses as 8.5 per cent. Courses conducted from 1976 to 1980 are summarized in Table 6.

Table 6: Adult Education Courses Conducted in Folk Development Colleges from 1976 to 1980

	TYPE OF COURSE	1976/77	1977/78	1978/79	1979/80
1.	Domestic Science	447	1261	1539	1090
2.	Agriculture	204	1387	2019	3850
3.	Accounting (Book-Keeping and Shop Management	226	2425	6286	-
4.	Technical Science	43	481	673	603
5.	Leadership	685	3257	2885	1699
	Total	1605	8811	13402	7242

Source: Z. J. Mpogolo. "Learning Strategies for Post-Literacy and Continuing Education in Tanzania". Hamburg: Unesco Instute for Education, 1981.

Whilst the outcomes of mass adult education take time to be felt, it is clear that positive effects are beginning to show in terms of acceptance of change, new patterns of village production and new approaches to training. The Folk Development Colleges have played a major role in this process. Furthermore, their growth is an indication that adult education in Tanzania is intended to be continuous and lifelong.

3.2. Vocational Development Programmes of the Ministry of Labour

The vocational development of young Tanzanians aged 15 or older who are not receiving secondary education is furthered by programmes of the Ministry of Labour and Social Welfare. This ministry is responsible for medium and long-term training programmes varying from formal programmes such as those run at Post-Primary Technical Centres to non-formal and informal approaches such as in-plant training.

Formal education programmes are mostly conducted in District Vocational Training Centres. These centres have recently been united with the Post-Primary Technical Centres formerly under the control of the Ministry of National Education.

The National Vocational Training Division within the Ministry of Labour and Social Welfare is responsible for the establishment of cohesive and coordinated training programmes on the craftsmen level. There is a marked tendency towards apprenticeship as a type of training. Hence, non-formal programmes with a strong component of informal on-the-job learning are gaining popularity.

3.2.1 Trade Testing (Age Group 17 to 45)

Qantitatively, trade testing is the largest single activity within the national vocational training programme. More than 60,000 candidates have been tested in 54 different skills since operations began in 1966. The main purpose of trade testing is to measure the skills/knowledge of craftsmen in order to be able to maintain a proper classification. Tests consist of a practical and a theoretical part and both are formulated under the guidance of the vocational training committee in the respective field.

Trade testing is at the core of the apprenticeship programme described further below, since the certification of apprentices is based on the three grade levels offered for trade tests.

Grade III is the lowest testing level, while if passed Grade I guarantees full certification as a craftsman. Candidates for Grade III tests are required to present certified confirmation that they are working in the relevant trade and have undertaken the one year basic training programme, plus one year of satisfactory in-plant training. Alternatively, they must show that they have satisfactorily completed two years' relevant work experience in the trade concerned. To attempt the next higher grade all candidates must have a minimum of one year's work experience from the date they have passed the preceding test.

In 1981, a total of 11,599 candidates were tested in 32 different trades and the average pass rate was 55 per cent for Grades II and III.

3.2.2 Post-Primary Technical Centres (Age Group 15 to 17)

Post-Primary Technical Training Programmes were established in 1975. Their rapid growth to 278 by 1977 underlines the importance attached to them in response to the needs of thousands of newly regrouped villages. Improved housing and amenities of the new villages required the skills of masons, carpenters and other craftsmen.

The curricula of the Post-Primary Training Centres are strictly geared towards the needs of the communities. The main objectives of the centres are to offer a two-year course in carpentry, masonry, and home economics for applicants who have completed primary schooling. By 1978 the centres had a capacity of about 18,000 students.

Approximately 50 per cent of the training time is devoted to practical work, as will be seen from the timetable in Table 7.

3.2.3 Basic Vocational Training, In-Plant Training and Related Evening Classes (Age Group 15 to 20)

The apprenticeship scheme of the Tanzanian Ministry of Labour is composed of three programme elements: (a) Initial skill training in a twelve months' programme of basic vocational training; (b) Three years in-plant training; (c) Evening classes held during the in-plant training period.

The aim of the twelve months' programme in basic vocational training is to impart to the trainee the fundamentals of a trade so that he can later on successfully complete a full

Table 7: Timetable of the Post-Primary Technical Centres

	SUBJECTS	PERIODS PER WEEK	
		1st Year	2nd Year
1.	Kiswahili	3	3
2.	English	3	3
3.	Workshop Mathematics	6	6
4.	Technical Drawing	8	4
5.	Political Education	2	2
6.	Practical Work (in one of three crafts)	20	24
	Total periods per week	42	42

Source: Ministry of Labour and Social Welfare, Dar es Salaam, n.d.

programme of in-plant training. Candidates must have completed a minimum of full primary education, they must have attained the age of 15, be medically fit and be successful in the selection tests.

In 1981 a total of 15,072 young people applied for training places, representing an increase of 1,137 or 8 per cent as compared to those who applied in 1980. However, due to limited training facilities only some 1,400 or about 10 per cent of all those who applied managed to secure a place.

The course consists of a three-months induction training, which is also the trainee's probationary period. The remaining nine months are spent on specialized craft training.

The curricula are prepared by vocational training committees composed of representatives from industry, the trade unions and the government. Training consists of 60 per cent practical work and 40 per cent theory. The subjects in theory are political education, technology, calculation, technical drawing, science, Kiswahili and English.

At the end of basic vocational training the trainees have to pass proficiency tests which include both practical tasks and written tests on related theory. Successful trainees are given an interim certificate of basic vocational training and are placed in relevant industries for in-plant training for a period of three years.

Over the last decade (1969/70 - 1979/80) a total of 5,794 young people have benefited from such a programme in the areas shown in Table 8.

After completion of basic vocational training, in-plant training constitutes the second phase of the Tanzanian apprenticeship scheme. The trainees sign a three-year contract of apprenticeship. Employers are required to ensure that the training provided comprises the skills and operations relating to the trade. Every six months they have to submit individual reports on each trainee and they are requested to appoint a supervisor to monitor the progress made by the trainees.

In addition, officers from the Ministry of Labour inspect in-plant training and advise employers on the most effective training methods. The trainees are released to attend classes of related instruction. Their progress in these classes is reported to the employer. They are issued with log books for recording in-plant training throughout the three-year period, and it is the responsibility of the employer to ensure that the log books are kept up to date and are made available for inspection when required. At the end of the first year of in-plant training the trainees undertake the Grade III trade test, progressing to Grade II towards the end of the second year and finally to Grade I at the end of the third year. At the satisfactory completion of the three-year training employers issue certificates of apprenticeship.

The demand for in-plant training has been increasing each year. While only 39 trainees undertook in-plant training in 1970, a total of over 3,000 trainees had undergone in-plant training by 1979.

During the in-plant phase of apprenticeship training, the trainees are expected to attend evening classes on related trade theory. These classes are compulsory for in-plant trainees and apprentices but optional for other skilled workers in industry, although the latter are strongly advised to attend

Table 8: Number of Graduates from Basic Vocational Training (1969/70 to 1979/80)

No.	OCCUPATION	TOTAL NUMBER OF TRAINEES
1.	Motor Vehicle Mechanics	787
2.	Fitting and Turning	563
3.	Welding-Fabrication	404
4.	Plumbing	387
5.	Carpentry and Joinery	444
6.	Masonry-Bricklaying	410
7.	Electrical Installation	677
8.	Tailoring	141
9.	Shoe-Making	165
10.	Fitter Mechanics	382
11.	Office Machine Mechanics	141
12.	Printing-Bookbinding	84
13.	Foundry-Blacksmith	243
14.	Civil Draughting	82
15.	Mechanical Draughting	50
16.	Motor-Rewinding	119
17.	Panel-Beating	35
18.	Printing-Signwriting	253
19.	Auto-Electrician	47
20.	Refrigeration/Air Conditioning	106
21.	Rockworkers (Drillers and Blasters)	64
22.	Rockwork Machine Mechanics	29
23.	Plant Operators	56
24.	Heavy Duty Drivers	80
25.	Industrial Electricians	45
	TOTAL:	5,794

Source: Ministry of Labour and Social Welfare,
Dar es Salaam, n.d.

these classes before attempting trade tests. The courses are held between 4 and 9 pm and last for one academic year for each Grade spread over a maximum of three evenings per week.

Hence, the evening course programme provides the basic related theory for the various skill specializations. Classes are conducted all over the country, using employers' establishments where no vocational school exists. Qualified craftsmen who have received basic instructor training are used as part-time instructors in their areas in the evenings. The programme has enjoyed con 1981 was 4,178 compared to the 20 trainees who started this programme in 1968. Some 17,000 craftsmen benefited from these courses between 1968 and 1980.

3.2.4 "Direct" Apprenticeship Training (Age Group 15 to 20)

Under a provision of the 1974 Vocational Training Act employers may apply to the Director of Vocational Training for permission to employ apprentices. This permission is granted on the basis of the facilities available for on-the-job training and the qualifications and experience of apprentice supervisors.

A period of "direct" apprenticeship of not more than five years is offered to young people who did not have the opportunity to receive full time basic vocational training and in-plant training and who have therefore to undertake the whole of their training on the job. This training is supplemented by related instruction in evening classes.

Trade testing of participants of the "direct" apprenticeship scheme is organized on similar lines to those of the testing scheme for in-plant training. Between 1980 and 1982 more than 1,000 young people were registered in "direct" apprenticeship.

4. INTEGRATED VOCATIONAL DEVELOPMENT IN RURAL AREAS: THE DISTRICT VOCATIONAL TRAINING CENTRES

The District Vocational Training Centres are most typical of the Tanzanian strategy of integrated development. These institutions have therefore been selected here for an analysis of their vocational development programme.

The establishment of District Vocational Training Centres (DVTCs) is regarded as a basic tool for rural development in Tanzania. On the assumption that development cannot result from an isolated initiative, but has to be based on an integrated development process, the Districts, which are responsible for the DVTCs, are supposed to utilize them for a homogeneous process of grass-roots vocational development of the people.

The responsibility of the Districts for DVTCs extends beyond the planning of the vocational programme to the recruitment of trainees, the placement of graduates in occupations, the promotion of extension work, and the establishment of cooperative work-education projects and small scale industries.

Through this array of measures the Districts are meant to secure the training needed for development projects. In particular the DVTCs have the following functions:

- to train young people in basic skills so as to make them employable in agriculture, industry, community service and the trades, or to make them able to find means and ways of self-employment,
- to explore and develop local resources as a base for further industrialization and for the application of appropriate technologies,
- to develop local arts and crafts and to improve the skills and productivity of local farmers, craftsmen and artisans,

- to support agriculture with respect to mechanization, irrigation, fertilization, storing and transport,
- to encourage complementary animal and crop husbandry for improved nutrition, economy and self-reliance on the family level,
- to improve home management, food preservation and food storing,
- to promote the understanding of ecology and symbiosis in agriculture, craft and industry in order to protect the environment and to use natural resources economically,
- to encourage cooperation in production, marketing and purchasing and in providing communal services.

Within such a comprehensive development scheme the vocational development of the individual student is not restricted to skill training, but encompasses an integrated process of vocational awareness and orientation in which young villagers are familiarized with occupational opportunities in their communities. Beyond preparation for a specific occupational area, the placement of the trainees in employment is secured, since every training programme is implemented in response to a need of the community.

4.1. Stages of Vocational Development in the Programme of the DVTC

The total period of full-time training at the DVTC is two years. During this time the trainees pass through a versatile programme of vocational development which is designed in accordance with local needs.

During the first 24 weeks of the training programme all trainees have to undergo general agricultural skill preparation. This programme phase is in line with the basic agricultural orientation of the Tanzanian economy and with the vocational awareness of occupations in agriculture which has been created by the common drive for self-reliance.

During the next 16 weeks female trainees receive comprehensive orientation and basic training in home economics and tailoring. Male trainees spend this time on orientation and basic skill acquisition in crafts which are closely related to agriculture, such as blacksmithing.

The remaining 12 weeks of the first year are offically recognized as vacation time. However, the vacation periods coincide with the planting and harvesting seasons and the trainees are expected to participate in this work in their communities.

The emphasis of the training programme is on practical work. The rate of practical lessons to theoretical lessons is five to one for all sections except crop husbandry, where practical instruction is even more heavily emphasized. An overview of the first year curriculum with the allocation of practical and theoretical lessons is presented in Table 9.

The vocational curriculum is supplemented by four lessons of general education weekly, two lessons each in Applied Calculation and English. These four lessons extend through all forty weeks of instruction during the first year of the programme.

The second year programme for males consists mainly of skill preparation in one of the following occupations:

- metal work,
- building crafts and
- woodwork.

Females receive skill preparation in tailoring and home economics. All programmes run for 32 weeks but differ slightly in the actual amount of training lessons.

Through this intensive training the trainees will acquire employable skills and they will be given opportunities for practising these skills in projects.

In the second year eight weeks are devoted to field work related to agriculture. These eight weeks will be spent on development projects in selected villages. The training pattern is shown in Table 10.

Table 9: First Year Curriculum of the District Vocational Training Centres

	SECTION	TOTAL WEEKS	BASIC SKILLS TO BE TAUGHT	TOTAL WEEKS	TOTAL PRACT.	LESSONS THEO.
1	Agricultural Training for All	24	- Crop Husbandry	14	520	84
			- Animal Husbandry	10	300	60
2a	(MALE) Artisan Skills Related to Agriculture	16	- Blacksmithing	5	150	30
			- Welding	5	150	30
			- Benchwork	6	180	36
2b	(FEMALE) Tailoring/ Home Economics	16	- Cookery	4	120	24
			- Tailoring	4	120	24
			- Needlework	4	120	24
			- Nutrition and Food Preservation	4	120	24

Basis for this scheme: 40 weeks of training per year,
40 lessons of training per week,
8 lessons of training per day,
1 lesson of training = 45 minutes

Source: Ministry of Labour and Social Welfare, Dar es Salaam, n.d.

Table 10: Second Year Curriculum of the District Vocational Training Centres

COURSE	TOTAL WEEKS	SKILLS	TOTAL WEEKS	TOTAL PRACT.	LESSONS THEO.
1. Metal Work	32	- Welding	12	360	72
		- Forging	12	360	72
		- Bench Work	8	240	40
2. Building Crafts	32	- Bricklaying	20	600	120
		- Plumbing	16	480	96
3. Woodwork	32	- Carpentry	16	480	96
		- Joinery	20	600	120
4. Tailoring/ Home Econom.	32	- Cookery	8	240	48
		- Tailoring	24	720	144
5. Field Work for All (Practical Attachment)	8	- Farming	4	-	-
		- Animal Husbandry	4	-	-

Note: Courses 1 to 4 are options; course 5 is mandatory for all students.

Source: Ministry of Labour and Social Welfare, Dar es Salaam, n.d.

Again the vocational curriculum with a ratio of practical lessons to theory lessons of five to one is supplemented by lessons in general education. Management courses for small scale industries and health science are taught in addition to English and Applied Calculation.

Special emphasis in the programme is given to the eight-week period of field work. It is intended to stimulate independent work behaviour and to acquaint the trainees with the demands and working conditions of their future workplaces. As far as possible the period of the field work coincides with the planting or harvesting season, when local farmers and craftsmen have a heavy workload. The DVTC is expected to select suitable villages for the field work in co-operation with the District authorities. Trainees should be provided with a basic outfit of tools and simple accommodation should be arranged through the village committee chairman. As improvisation is emphasized a shady tree could serve as a workshop under which a simple workbench can be erected. Staff members of the DVTC and District Authorities are requested to visit the trainees about every two weeks.

Since the first two years after graduation from the DVTC are considered to be particularly difficult for the young craftsmen and farmers they are assisted in a number of ways which smoothe the transition from training to employment. Most important, the training programme will be followed by one year of supervised extension work. The trainees are aided in establishing cottage industries or farming activities within their home areas or they are placed in paid employment in the various District development projects or community services. Hence, the training does not end with the two-year institutional programme. An extension officer is attached to the centre. His primary function is to organize the settling of trainees in co-operation with the District authorities.

In addition to the supervised extension work there are plans to provide assistance in the funding of suitable extension work, in the management of cash operation, in accounting, budgeting and banking and in marketing and storing finished products.

4.2. Environments of Vocational Development in the Programme of the DVTC

In line with the aim of providing a combination of training and work the DVTC utilizes learning environments which have a strong production component. For this purpose, the following production units have been attached to the DVTCs:

- *craft training production unit:* two workshop blocks provide facilities for craft training and for the production of farm tools and related equipment,

- *farm production unit:* on a couple of acres of available land farming is practised on an educational and commercial basis; this unit is designed for intensive production of vegetables, broiler chickens and eggs,

- *home economics/tailoring production unit:* tools and equipment for tailoring and for food preparation are installed in this production unit; tailoring is extensively used for income generation.

Through these production units the trainees obtain valuable work experience. At the same time these units serve the DVTC as a means of income generation and of integration with the surrounding community. If administered effectively they are therefore a valuable alternative to high cost simulation of production processes of the type used in school workshops.

One further step from the production unit towards employment is the extension work in the second year of training. In out-of-school locations the trainees gain a realistic insight into their prospective work environments since extension work is designed as full participation in the work process.

Altogether the training approach of the DVTCs is based on a comprehensive compound system of learning environments. Classroom instruction, pre-production skill training in the workshops of the DVTCs as well as learning and working in production units and extension work in the community should ensure high learning motivation and a smooth transition from training to employment.

5. HIGHLIGHTS OF THE VOCATIONAL DEVELOPMENT PROCESS IN TANZANIA

The Tanzanian experience is in several ways remarkable for the establishment of systems of vocational development. Especially the integration of the reformed system of vocational education with the overall development process of the country may be regarded as a unique model.

Another outstanding characteristic is the degree to which the training centres are interlinked with workplaces in the surrounding community. The production units in the DVTCs, the work extension programmes in the community and an initial phase of employment supervised by the centre will facilitate a smooth transition from training to work.

Of course large scale reforms such as the implementation of Education for Self-Reliance always have their shortcomings. In many cases Tanzanians have proved to be overtaxed by the reorientation in values which is basic to the drastic changes in their social institutions, and some reforms were too hastily implemented. Nevertheless, the educational reform in Tanzania remains one of the great experiments of social and educational reform of our times.

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THE CASE STUDY FROM THE USA

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. PROFILE OF THE CASE STUDY

The USA case study analyses a comprehensive system of guidance services for secondary schools. This system has specifically been designed to support vocational development.

Beyond the elaboration of guidance services, research work in the guidance field has contributed substantially to our knowledge about vocational development over the lifespan. Vocational education has greatly benefited from this research by the development of sequences of vocational curricula for all levels of schooling instead of the traditional concept of "blocking" vocational training after the end of a cycle of general education.

The provision of vocational guidance and its more recent variety, career guidance, are deeply rooted in the American concept of comprehensive educational services. As early as 1908 Parsons' book on "Choosing a Vocation" established vocational guidance as an independent discipline of research. The foundations of educational guidance were laid more than a decade later.

Underlying the demand for vocational guidance services is the recognition that the individual is in need of assistance regarding all stations of the complex decision-making process leading from school to a vocational career. The complexity of the decision-making process varies with the range of educational alternatives which can be chosen by the student and of course also with the range of different employment opportunities in the labour market. Therefore, in countries such as the USA, with comprehensive education systems offering a choice of different courses and with a highly diversified labour market, the need for vocational guidance is most urgently felt.

On the whole, guidance has progressed from one-point-at-a-time sessions between counsellor and client to process-oriented models which are tightly integrated into the school's instructional and administrative set-up.

The Career Planning Support System (CPSS), which has been analysed here, is one example of a comprehensive career guidance system as it reflects the current state of the art. CPSS is designed for adaptation to existing staff positions, aims at integration into the existing curricula and includes such components as community support and calculation of additional costs. CPSS's planning approach is primarily based on student needs (see Table 1).

2. STAGES OF VOCATIONAL DEVELOPMENT

The Career Planning Support System does not advocate any specific method of career guidance. Instead it recommends that the users should become familiar with as many career guidance methods as possible.

The system adheres to a developmental concept such as that expressed here by the stages of vocational development. However, these stages, which constitute part of the underlying structure of this study, have not been applied by the authors in their analysis of the CPSS programme. In order to guide counselling activities in the school CPSS suggests the following four categories of fundamental career development skills:

- Self-Awareness, Social Awareness and Personal Decision-Making: These skills are needed for a better understanding of interests, abilities and values, and for making personal career decisions.

- Career Exploration: These skills are needed to make certain of one's interests and abilities in relation to the requirements of work in different occupations.

- Job Acquisition and Adjustment: These skills are needed to locate possibilities of employment and to obtain employment and adjust to a job, whether it be the first or a subsequent one.

Table 1: Profile of the USA Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula and administrative structure of a system for the improvement of vocational (career) guidance at secondary schools
Age Group Served	Primarily 12 to 18 years of age
Sponsor of the Programme	Developed under contract with the U.S. National Institute of Education by the National Center for Research in Vocational Education in Ohio; distributed against a nominal charge
Intention of the Programme	CPSS aims to provide the students with the essential skills needed for their career development in a lifelong perspective. This is achieved through a planning package with detailed materials to be applied for the improvement of existing guidance programmes
Specific Traits	Based on a developmental approach to career guidance with a diversification of guidance services Emphasis on student needs in the development of all steps of the programme; comprehensive set of detailed materials for administrators, instructors and learners

Education and Training Acquisition and Adjustment: These skills are needed to locate possibilities for further education or training, to enter an institution of education or training and to adjust to it.

These four categories represent the minimum career development skills CPSS wants to have addressed in the school's curriculum. Since CPSS is specifically designed for secondary schools the consecutive order of stages of the developmental process is not emphasized.

The scope of career development tasks which CPSS advocates is described by twenty programme goals. These goals are derived from the same number of career development skill items included in the CPSS Student Questionnaire. They are presented in the Appendix of the case study.

The programme goals of CPSS should be regarded as a checklist for essential career development skills to be acquired in any comprehensive programme of vocational guidance, be it in the form of separate guidance services or in the form of curriculum integrated guidance.

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

CPSS includes an assessment of resources for vocational development as one of the initial procedures in starting the programme. The main categories for this assessment are "school" and "community". Hence, the resources are grouped under these two "master"-environments which typically result from a differentiation between in-school and out-of-school places of learning.

CPSS does not attempt to divide "school" and "community" further into more specific environments such as classroom and school workshop. Instead the career development resources to be tapped in the school and in the community are explored according to the following subcategories:

- people,
- equipment,
- materials,
- space needed,
- funds,
- external services.

Although this differentiation is not in line with the definition of specific learning environments pursued in this study, it provides an approach which might well supplement the study's prevailing categorization into classrooms, laboratories, school workshops etc. The CPSS subcategories can be applied to describe the career development resources contained in any of the specific learning environments.

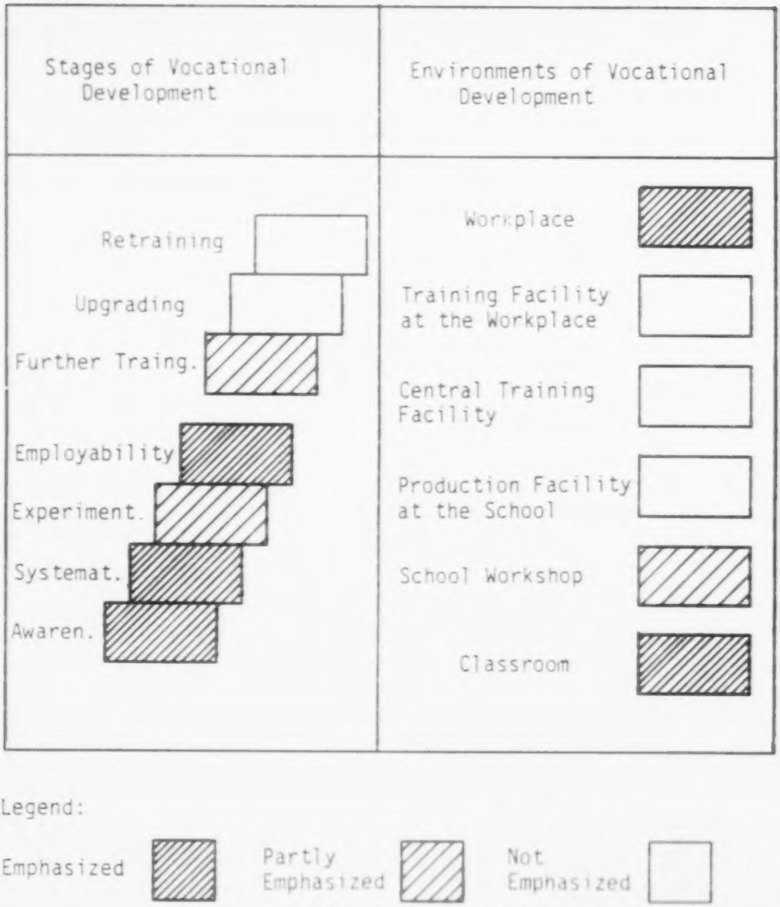
Beyond strengthening the range of guidance services of the school, CPSS relies on establishing a task force for making an inventory of school and community resources at the outset of the programme. The resources are then evaluated to insure that the most efficient use will be made of them. The seven-member task force for producing the inventory and assessing the resources is headed by an expert who must be familiar with the career development resources in the community. This "resource leader" will be the school's permanent expert on resources, especially at the point when career development units are developed and the resources for each unit have to be determined.

The resource leader's permanent tasks also include the accounting of resources once they are utilized. Information generated through the accounting process has to be recorded on prearranged files which are provided by CPSS. The appropriate information about career development resources in the learning environments of the school and the community should always be available immediately after the specific resources have been utilized within the CPSS network (see Table 2).

4. DISTINCTIVE FEATURES OF THE CASE STUDY

The case study analyses career development services as a system within the total instructional programme of the American high school. Such services are an established part of the U.S. system of education. In some other industrialized countries they are much less developed and in many developing countries they are virtually non-existant because of financial constraints.

CPSS is not a set of fully developed curriculum units to be implemented in a high school. Rather it is a structure of


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment.
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: At the stage of "employability", job-seeking skills are emphasized. "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the USA Case Study

organizational measures and didactic and methodological orientation marks designed to pick up existing vocational guidance programmes and attempt to improve them up to a level corresponding with the state of the art in this field.

Especially valuable is the list of programme goals developed as a content orientation for CPSS. No particular method of guidance is prescribed and it can be assumed that career development skills can mainly be taught without the help of counsellors. Indeed, modern guidance approaches rely heavily on curriculum-integrated guidance, which is more effective and less cost-intensive.

The American concept of career education has to be regarded as a curriculum-integrated approach in which vocational guidance has been fused with vocational education for the reinforcement of an individual's vocational development. Experts from the field of vocational guidance have widened the traditional concept of vocational preparation by emphasizing the consecutive stages through which each individual should pass before entering into gainful employment.

Basically the concept of lifelong vocational development which is advocated by this study can be described as having emerged from theory building in vocational guidance. And it is the distinctive contribution of the case study from the USA that it describes the goals of career development without prescribing its organizational and curricular set-up.

USING CAREER GUIDANCE TO SUPPORT CAREER DEVELOPMENT: THE CAREER PLANNING SUPPORT SYSTEM (CPSS) AS AN ILLUSTRATIVE INNOVATION

by

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CAREER GUIDANCE AS AN INDISPENSABLE COMPONENT OF EDUCATION FOR WORK: PROJECT COORDINATOR'S NOTE

It might not be evident why a case study of a career guidance programme has been included in this study of vocational development. The reason for this decision is that guidance theories have had a strong impact on the design of modern concepts of education for work.

In particular, curriculum development for the early stages of education for work (awareness, systematization and experimentation) has been inspired by the rich history of guidance. Guidance originated in the USA as vocational guidance and it has maintained its major concern with the career decisions of individuals. The cooperation between guidance and vocational education came to fruition with the rise of differentiated forms of vocational guidance in the second half of this century.

In this respect the formation of career education in the early 1970s in the USA was largely due to the influence of theories of guidance on vocational concepts. Career education was based on a sequence of stages of vocational development and it made extensive use of out-of-school learning experiences -- characteristics which this study highly values.

Consequently, it was one of the first intentions of this study to include a career guidance programme from the USA which would demonstrate the potential of theory and practice in this field for the reform of education for work.

1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT

1.1. Geographic and Demographic Situation

The continental USA extend from the Gulf of Mexico in the south to the Canadian border in the north. Natural boundaries to the east and to the west are formed by the Atlantic Ocean and the Pacific Ocean respectively. The vast central lowland is divided from the sea by mountain ranges. The Appalachian mountain range in the east is low and almost unbroken. The Rocky Mountains in the west are a discontinuous chain of high, rugged mountains.

The Mississippi, which drains most of the midcontinent into the Gulf of Mexico, is one of the world's largest inland waterways. Almost 2000 km of the stream as well as great distances of its tributaries, the Ohio and Tennessee, are navigable.

The total area of the nation's 9,363,123 square kilometres includes also the outlying territories Puerto Rico, the Virgin Islands, Hawaii, the Pacific Islands and Alaska. The number of inhabitants in this area totals some 220 million, with a wide variety in the density of population; Alaska for instance is the largest state with a territory of 590,000 square miles, but with only 406,000 persons it has the smallest population of all states.

1.2. Socio-Economic Structure

The USA, with less than 6 per cent of the world's population, produced 25 per cent of the world's output of coal (1984), and 17 per cent of its crude petroleum (1985). The agricultural sector even produced 46 per cent of the world's maize (1985) and 17 per cent of its beef, pork, mutton and lamb (1985).

Coal deposits are largely concentrated in the eastern part of the country, more than one third of crude petroleum production comes from Texas, and the most important reserves of copper are situated in the mountaineous states of the West.

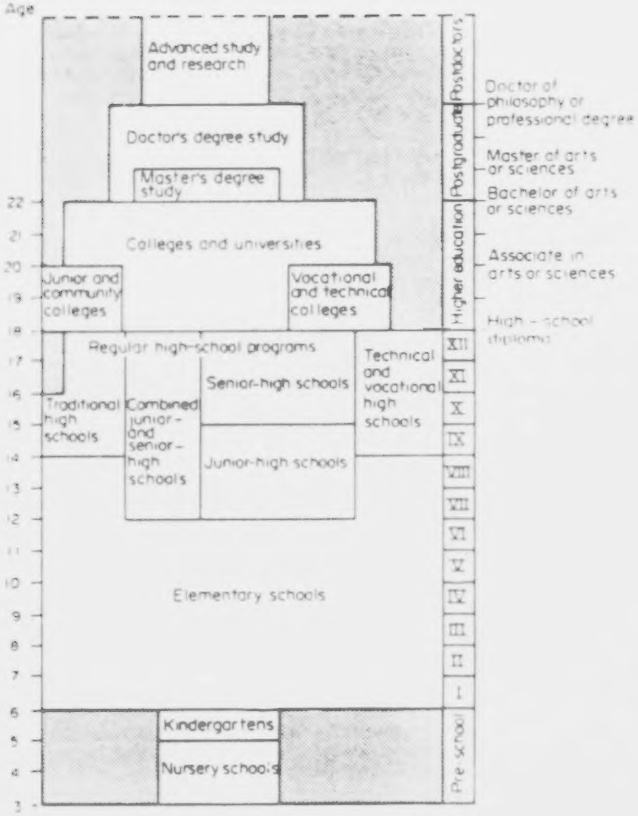
About one quarter of the U.S. population is rural, i.e. they are living in places which have fewer than 2,500 inhabitants. The large cities with populations over one million have begun to lose residents from their older town centres. Small and medium sized towns of between 10,000 and 100,000 inhabitants, on the other hand, account for a growing proportion of the residents.

1.3. The Formal and Non-Formal Education System

The education system in the United States is intended to meet the diversity of educational needs of one of the world's largest countries. The formal education system of the United States provides free public education from grades kindergarten through twelve. The first part of this system is constituted by the elementary schools with grades kindergarten through six; the second part consists of the junior high or middle schools with grades seven through nine; and the final part is composed of the senior high schools with grades ten through twelve. Students are legally required to attend school up to age sixteen and the typical high school graduate is aged eighteen (see Figure 1).

The public, compulsory education system (grades kindergarten through twelve) is controlled and supported by local communities. Elected local school boards are granted authority for determining local educational programmes, and school districts are supported through local property tax revenue. Although the control and finance of education is a local school district responsibility, both state and federal legislation influence education by authorizing and providing funding for specific educational services.

Recently, such legislation has focused on the needs of specific groups such as the handicapped, minority groups, the disadvantaged, and unemployed youth. State and federal legislation provide funding to local school districts for use in prescribed educational services. Local districts may decide whether to accept this funding, but if they do they are re-


Age
Advanced study and research
Doctor's degree study
Master's degree study
Colleges and universities
Junior and community colleges
Vocational and technical colleges
Regular high-school programs
Technical and vocational high schools
Senior-high schools
Traditional high schools
Combined junior- and senior-high schools
Junior-high schools
Elementary schools
Kindergartens
Nursery schools
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
Postdoctors
Postgraduate
Higher education
XII
XI
X
IX
VIII
VII
VI
V
IV
III
II
I
Pre-school
Doctor of philosophy or professional degree
Master of arts or sciences
Bachelor of arts or sciences
Associate in arts or sciences
High-school diploma

Source: Husén T., Postlethwaite, T.N. (eds.) *International Encyclopedia of Education*. Oxford, UK: Pergamon, 1985, p. 5361.

Figure 1: Structure of the U.S. Education System

quired to comply with specified standards and accounting procedures.

Post-secondary education is diverse and includes non-formal education and training programmes in post-secondary vocational-technical institutes, tertiary education in two-year junior or community colleges, and public and private four-year colleges and universities.

In the non-formal sector continuing education for adults is a growing concern in the United States, with many institutions providing educational opportunities for adults who have left the formal school system. The degree of adults' interest in continuing education was documented in a study by the College Entrance Examination Board (Arbeiter, Aslanian, Schmerbeck and Brickell 1978) which indicated that 40,000 Americans or 36 per cent of the population between 16 and 65 are likely to need further education because they are in career transition, i.e. they are either in the midst of or considering career changes. Sixty per cent or 24,000,000 of these adults actually stated that they plan to seek additional education as a means of making their desired career transition. Educational opportunities for adults and out-of-school youth include adult basic education programmes, private and public vocational trade and business schools, public and private institutions of higher education, programmes of private employers, government agencies, the military, professional associations, labour organizations and community and religious organizations, free universities, correspondence instruction, federally legislated programmes, and private instruction (Faser 1980).

1.4. Educational Programmes from Kindergarten up to 12th Grade

Although the specific curriculum is determined by local boards of education, it is possible to draw up a general description of the educational programme for grades kindergarten through twelve. During elementary school, students attend grade-level classrooms which usually have one teacher who teaches all subjects with the exception of such special subjects as music, art, and physical education. Children are either grouped heterogeneously in the same classroom regardless of ability and achievement levels or children of similar ability and achievement levels are placed in homogeneous groups.

In addition, special education is provided for children with handicaps which make it difficult for them to follow instruction in a regular classroom. At the elementary level, the curricular subjects are compulsory, but limited choices are available in the extracurricular activities.

The middle or junior high school programmes may vary among local school districts. In some districts these schools begin at grade 6 and end with grade 8, but typically the programme is for grades 7 to 9. These middle school years are seen as a transitional period between childhood and adolescence. The major emphasis of the curricula is on the development of basic schools. Subject areas such as a foreign language, vocational education and intensive music and art instruction, from which the children may choose, are introduced, and they are encouraged to develop skills in selecting from those courses that are most appropriate to their personal interests and abilies.

Senior high school provides a variety of educational programmes. Most high schools in the United States are comprehensive schools with a range of curriculum offerings in the college preparatory, vocational education, and general education areas.

This means that high school students need to make curricular choices throughout high school. There is great flexibility in the selection of educational programmes and there are no standardized federal, state or local examinations determining whether a student will be allowed to enter any of these programmes.

The students are provided with information about the various programmes and receive assistance from the guidance specialists in selecting those that suit their capabilities and aspirations so that they may be able to choose satisfying career opportunities when they have completed high school.

A major national emphasis supported by guidance personnel derives from the recognition of the need to strengthen vocational education programmes. Because of the expense of the necessary facilities, it is difficult for local high schools to afford a full range of vocational programmes for high school students. Responding to this need, the federal government has passed legislation to support the development of expanded vocational education programme offerings. This has been partly achieved through the establishment of area vocational-technical education centres. These centres are separate educational facilities which serve more than one local school district. Extensive guidance services have to be involved in order to place students in programmes which suit them. Usually, students are enrolled in their local high school and attend that school for half the day while going to the area vocational centre the other half day for intensive vocational education.

Since students can leave the public school system at age sixteen, some terminate their high school education before graduating. While most of these enter the labour market or remain unemployed, other options are open to them and have to be considered by the guidance specialists. These options are: the adult basic education programmes which are usually night school courses offered by local school districts; the federally sponsored programmes which provide further educational opportunities; the General Educational Development (GED) examination which, when successfully passed, is recognized by some institutions as the equivalent of a high school diploma.

Students who complete high school have a wide range of options available to them. These include entering the labour market, entering the military, or enrolling in post-secondary training such as that offered by junior or community colleges, private vocational schools, or four-year colleges or universities. Some of these educational institutions have open admission policies which admit all students who apply, while others such as colleges and universities have admission requirements based on high school grades and a student's scores on college entrance examinations. Each post-secondary educational institution has the authority to set its own admission standards.

This extensive range of options can only be handled by the students with the assistance of guidance specialists because they need comprehensive information and help in making choices based on realistic career plans.

2. MONITORING VOCATIONAL DEVELOPMENT THROUGH VOCATIONAL GUIDANCE

2.1. The Traditional View of Guidance Services

In the United States, guidance programmes provide a core educational function which parallels other functions such as instruction and administration. As Wrenn (1962) has stated, "Guidance in schools is an American phenomenon. No other country in the world devotes so much attention to the child as an individual -- and to assisting children in the decisions they must make as they grow up" (p. 1).

Herr (1982) provides the following description of the philosophical base for guidance:

> From their beginnings in this nation in the last century, guidance and counselling have had a continuing commitment to individual rights, to facilitation of free and informed choice, and to helping persons develop intelligence about their personal characteristics and opportunities available to them. Implicit in such value positions has been the intent of guidance and counselling to help persons become more purposeful and active in the management of educational, occupational, and personal/social options available to them ... (p.156).

Guidance programmes are based on the premise that individuals should be prepared for making choices affecting their lives and should develop a sense of responsibility for the development of their full potential.

Building from this philosophical base, guidance programmes have become an integral part of the educational system. These programmes have the unique goal of individualizing the educational process by helping students understand options, derive full benefit from the school programmes, and develop skills in making decisions about educational options.

Historically, guidance programmes have received greatest emphasis at the high school level. This is because high school students have the widest range of educational decisions to make and have a major need to develop educational and occupational plans for the post-high school years. More recent work in developmental psychology has emphasized the need for guidance services throughout the lifespan including the elementary school, middle school, and adulthood in addition to high school.

Guidance programmes have traditionally been staffed by counsellors who have had special training which qualifies them to provide specialized guidance services. Until recently, guidance has been defined as a number of services which support the individual development of students. Shertzer (1982) has defined traditional guidance services as including:

- *Appraisal Service:* The goal of this service is to collect, analyze, and use personal and social data to help students better understand themselves. This includes testing, student records, and other more subjective information.

- *Information Service:* The goal of this service is to provide information about educational, vocational and personal/social information for use by students in making individual decisions.

- *Counselling Service:* The goal of this service is for counsellors to provide individual and group assistance to students to increase students' self-understanding and self-development.

- *Planning, Placement and Follow-Up Service:* The goal of this service is to help students decide, select and use opportunities within the school, the labour market, and post-secondary educational institutions.

- *Consultation Service:* The goal of this service is to assist parents, teachers and administrators to understand students' needs and become more helpful in supporting student development. (p.11)

2.2. Career Development as a Framework for Guidance

Guidance has a long tradition in American education and the scope of guidance services described above has been reshaped by recent influences. A clearer understanding of human development which has resulted from research in developmental psychology is a first influence. Developmental psychology has defined human development as a continuous, lifelong process involving a number of stages. Mastering the developmental tasks associated with each of these stages constitutes successful development. Based on such an understanding, it is possible to develop age-appropriate goals and objectives for guidance programmes which imply guidance activities in the way that individual students cope with developmental tasks at various developmental stages. This view of human development suggests that guidance programmes should be designed for all age levels rather than focusing solely on the school-to-work transition during or after the high school year.

Following the work of developmental psychology, career development researchers have extensively clarified the nature of the career development and decision-making process. Early guidance programmes were based primarily on the trait-factor theory of occupational choice. According to this theory the counsellor was proceeding on a three-step guidance process:

- get to know the vocational characteristics of your client;
- be familiar with the dimensions and facts of the labour market which are relevant for human development;
- match the characteristics of your client with the requirements of the labour market.

Hence, this procedure emphasized the choice process as a matching of individual traits, usually defined as aptitudes, and job factors, which called for certain characteristics of workers. Consequently, in this view an individual's vocational development centred around a very limited number of occupational choices over a lifespan.

More recent guidance theories have expanded this definition of vocational development to encompass the comprehensive view of an individual's career. Such a concept of career development is described by Hansen (1976) as follows: "... a continuous, lifelong person-centred process of developmental experiences focuses on seeking, obtaining, and processing information about self, socio-economic and labour market trends, and engaging in purposeful planning in order to make reasoned decisions about work and its relation to other life roles with benefit to self and society." (p.39)

A number of prominent theorists such as Ginzberg, Super, Tiedemann, Gribbons, Roe, and Holland have contributed to the substantial base of research on career development. Herr (1972) has summarized the implications of this research in the following way:

- Career development is an ongoing process which extends from infancy through adulthood.
- Career development can be described in terms of learning tasks, frequently defined, which are important at each stage of development.
- Career development is modifiable.
- Since career development is tied to physical and personality development, its facilitation should not be compartmentalized or isolated.
- Because the potential exists to identify the attitudes, knowledge and skills which make up career maturity or development, it is possible to develop objectives which encompass these factors.
- Where career development theories have direct implications for education, vocational education, or guidance, it is as they focus on the students' or adults' understanding. (pp.65-66)

Career development theories suggest several conceptual models which provide a basis for the development of guidance programmes. A first model is multipotentiality. This is the notion that every individual is suited for several different occupations. This model argues for the need to develop guidance strategies which enable the individual to explore a wide range of career options prior to making specific career decisions. Career development continues throughout the lifespan. Guidance services should be available early in life and should continue throughout adulthood. Developmental tasks are geared towards the formation of career-related attitudes and skills which are important at each developmental stage. Consequently, goals have to be defined for guidance programmes at each developmental level to meet the need for comprehensive, continuous guidance services.

Several career development theories emphasize the influence of self-concept on career development and career decision-making. Self-concept is the subjective view which we hold of ourselves. While other theories emphasize personal characteristics such as interests and abilities, the self-theory suggests that career choice is an attempt to implement one's own concept of self through work. In this process the development of self-esteem must be the major goal of guidance programmes, since self-esteem is a prerequisite for realistic career decision making.

Although early career development theories have already stressed the importance of studying the requirements of occupations, later theories have expanded our understanding of the role of occupational knowledge in career decision making. Recent work has focused on the need to cluster occupations around common characteristics so that individuals can explore a wide range of possible options prior to making specific choices. Too often, career decisions are based on limited knowledge of occupations. Guidance programmes have the function of increasing occupational awareness and exploration.

A final conceptual model assumes that career decision making is a process which can be learned. While early career development theories did not describe the choice process, recent theories are looking not only at factors which influence choice but also clarify the nature of the decision-making process itself. These theories suggest that vocational decision making includes the following steps:

- clarify personal values,
- identify options,
- evaluate options,
- select options, and
- implement decision.

Once learned, these decision-making skills can be applied by the individual to a variety of life options beyond the vocational field.

In summary, early guidance programmes were based on early career development theories. For this reason, guidance programmes were traditionally available only at the secondary school level (junior/middle school and high school). They focused on providing assistance to students who had to make specific educational or occupational decisions, and they were based on a limited understanding of the career development process. Recent career development theories have been used to expand the content of guidance programmes. In the United States, guidance has during the past decade become an educational programme which is systematically designed to provide comprehensive career development assistance to all students at all educational levels over the lifespan.

2.3. Defining the Content of Career Guidance Programmes

In addition to new insights into the career development process several other factors have influenced a redefinition of guidance services. Federal legislation in the United States, including the Vocational Education Act of 1963 and the emergence of the career education movement, provided both funding and leadership which created interest in guidance as an educational method to assist individuals in the career development process. Also about this time, there was a major demand for educational accountability. State and local educational agencies were responding to a public demand for increased accountability regarding their activities. In a comprehensive accountability movement all subject areas were involved in the process of developing lists of educational objectives and appropriate measures for assessing student achievement of these objectives. Guidance had previously been regarded as an ancillary service but in conformity with the claim for accountability guidance specialists used new findings about career development to specify objectives and to develop an array of educational strategies to achieve them. As Gysbers and Moore (1981) indicate: "The convergence of these movements, i.e. guidance and accountability in the early 1970s, served as a stimulus to continue the task of defining guidance developmentally in measurable individual outcome terms - as a programme in its own right rather than as services ancillary to other programmes". (p. 8)

Two other factors which influenced the expanded definition of guidance were increased understanding of adult development and increased mandates for employment and educational equity for such groups as women, minorities, and the handicapped. These developments provided a better understanding of the special career development of specific groups. As a larger segment of the population in the United States has entered the adult years, a new demand has been created for adult career guidance services. While career development research had given only limited attention to the special needs of women, minorities, and the handicapped, new pressures for equity resulted in research initiatives and reevaluation of existing theories. These efforts provided direction for designing guidance strategies to strengthen guidance for these special needs groups.

This new direction of guidance programmes was summarized by Gysbers and Moore (1981) in the following statement: "Beginning in the 1960s but particularly in the 1970s the concept of guidance for development emerged. The call came to orient guidance from what had become an ancillary, crisis-oriented service to a comprehensive, developmental programme". (p. 4)

One outcome of these new activities has been the clarification of the content of career guidance. Because of the decentralized nature of education in the United States, these activities have focused on the state and local levels. Counsellors were extensively involved in programme development. Although there are differences across states and local school districts, common content areas have emerged. Whitfield (1980) summarizes the goals of these broad career guidance content areas which were reflected in local and state efforts:

- *Self-Awareness:* Acquire a positive attitude toward self and others, a sense of self-worth, and the motivation to accomplish personal goals.

- *Educational Awareness:* Recognize that all educational experiences are integrated with total career development and preparation.

- *Basic Skills:* Develop the basic skills of reading, writing, computation, speaking and listening, which are essential to successful preparation for and application to a constructive and satisfying career.

- *Attitude Development:* Develop positive attitudes toward learning, work, leisure, and individual and cultural differences.

- *Career Awareness and Exploration:* Develop an early and continuing awareness of career options and opportunities and explore these in relationship to maturing personal values, interests, and aptitudes.

- *Career Planning and Decision Making:* Engage in a career development process designed to increase knowledge of self, work, leisure, and society, and apply this knowledge in making wise decisions along the career development continuum.

- *Career Preparation:* Develop competencies needed for progression or entry into the next educational or occupational level.

- *Job Acquisition and Retention:* Develop skills to locate a job and obtain an interview and remain employed.

- *Consumer and Economic Awareness:* Understand the contribution of work to the economic system and acquire the consumer competencies needed to make wise decisions in the use of individual resources. (pp. 100-101)

Through these activities a systematic approach to defining and specifying programme goals and objectives has been developed and this has helped to clarify the content of career guidance. Local schools have been able to use these materials to support the development of their own guidance programmes, which are tailored to the needs of their students. Specifying the content of guidance as a first major step has enabled the development of more comprehensive guidance programmes.

3. THE DEVELOPMENT OF COMPREHENSIVE CAREER GUIDANCE PROGRAMMES

3.1. New Career Guidance Strategies

Traditional guidance programmes relied on a limited number of strategies. These included the use of testing and appraisal information, the organization and use of career information, counselling of individuals and groups, career planning and placement services, and consultation services for parents, teachers, and administrators. In addition to these practices a number of new guidance strategies have emerged as stated by Miller and Benjamin (1975) and Campbell, Rodebaugh, and Shaltry (1978). Some of them involve the further development of traditional guidance practices while others represent totally new ones. A comprehensive description of these new strategies is presented below:

Assessment and Testing. In the area of assessment and testing, several new developments have occurred. Two that have particular relevance to career guidance are career maturity inventories and comprehensive test batteries which provide interpretative reports. As career development theories indicate, there are a number of career development stages with associated tasks. The career development inventories are designed to assess an individual's attitudes and skills related to career planning. These instruments provide information about career maturity, that is, the extent to which an individual has developed and is using career attitudes and skills appropriate to his or her current career development level. Several test batteries now combine instruments to measure more than one individual characteristic, such as both interests and aptitudes. Traditionally, a number of different tests, each measuring a specific personal characteristic, had to be administered. Many of the new test batteries include an interpretative report which not only reports test scores, but also suggests possible career options.

Career Resource Centres. The organization and use of career information to support career planning has always been an important guidance strategy. A recent development is the use of career resource centres which provide comprehensive facilities including physical space for the use of career information, a variety of career information resources, and staff to assist individuals in using the information.

Computer-Based Guidance Systems. A major emphasis has been on the development of computer-based career guidance systems. Recent federal funding in this area has stimulated the development and adoption of these systems. Computer-based systems, developed either at the state level or by commercial firms, provide a cost-effective method of organizing, updating and disseminating career information. This means that greater financial and staff resources have been used to develop these systems, which contain more comprehensive, accurate, and current career information than was previously available when each local school district attempted to collect and organize its own information.

Career Development Curriculum. The use of career development curriculum materials has expanded as a method of providing career planning assistance to larger numbers of individuals. A variety of curriculum materials which focus on such areas as self-awareness, career awareness and career decision-making has been developed. They are intended to be used in the classroom or with small groups. By implementing them teachers and counsellors are able to provide more systematic planning instruction.

Training for Decision Making. Current career development theories stress the importance of career decision making. A number of specific programmes have been developed to teach the relevant skills. Basic steps in career decision making are taught, and opportunity is provided to practise the acquired skill. In some cases, such programmes have been adapted to the computer.

3.2. Systematic Planning of Guidance Programmes

With the strategies presented above more comprehensive and systematic career guidance programmes can be offered. During the last decade, both the content and the process of career guidance have been expanded. As a result of these activities more effective options are available to local school districts.

Mitchell and Gysbers (1978) indicate that these programmes are generally built on the following assumptions:

- They are based on student needs, and programme outcomes are specified.
- They are designed to meet the needs of all students.
- They are articulated so that students have systematic guidance experiences throughout their schooling.
- They are developmental and preventative rather than crisis-oriented.
- They are designed to enable students to participate in their own career development.
- Counsellors are accountable for the outcomes of the guidance programme.

Since each local school district in the United States is ultimately responsible for the design and implementation of a guidance programme which is most appropriate for the local student population, it has been important to develop systematic programme planning procedures that could be used by local school districts. A final development related to career guidance has been the emergence of systematic programme development materials for the use of local schools to strengthen the guidance programmes. Gysbers (1978) describes several of these efforts as follows:

The Career Planning Support System (CPSS): This system includes procedural guides, audiovisual materials, survey instruments, and staff training materials, which help the local school staff to use a step-by-step process of assessing, planning, developing, implementing, and evaluating their guidance programme. The development of the materials was completed by the National Institute of Education. The six steps supported by this system are (1) staff orientation, decision making and organization; (2) assessing needs and resources; (3) specifying goals and student behavioural objectives; (4) generating alternative methods; (5) designing programme evaluation; and (6) implementing planned change.

Comprehensive Career Guidance System: This system contains twelve training modules which are designed for use in teacher education institutions and in inservice counsellor education programmes. The system was developed by the American Institute for Research. The twelve modules cover five major categories encompassing the following topics and subtopics:

- Orientation: Career development theory, programme development model, assessing desired outcomes, assessing current status, and establishing programme goals.

- Structuring: Specifying student performance and objectives and selecting alternative programme strategies.

- Implementation: Specifying process objectives, developing programme staff, and achieving programme implementation.

- Cost-Impact Decision Making: Conducting product evaluation and communicating evaluation results.

Cooperative Rural Career Guidance System: This set of development materials is tailored to meet the specific needs of rural school systems. The materials were developed by the National Center for Research in Vocational Education, the Wisconsin Vocational Studies Center, and Northern Michigan University with funding from the United States Office of Education. This system contains sixteen components grouped into the following four areas of activity:

- Career Guidance Programme Support Information: State of art review, life role development model, and career guidance resources.

- Career Guidance Programme Process: Planning and implementation, career development needs assessment, behavioural objectives, resource assessment, and deciding via evaluation.

- Career Guidance and Counselling for Groups and Individuals: Career counselling in rural schools, career information desk reference, an individual approach to career counselling and placement, transitional career placement in rural school, and career guidance practices.

- Career Guidance Programme Support Functions: Staff development, community relations and involvement, and rural community perspectives towards career development.

Missouri Comprehensive Guidance Programme: This programme was developed at the University of Missouri-Columbia and was partially supported by a grant from the United States Office of Education. The programme development materials are organized into three major components: a content model, a process model, and an implementation model.

- Content Model: These materials organize the content of career guidance using four interrelated knowledge and skill groups needed by individuals to live effectively. These include life roles, settings and events, life career planning, and basic studies and occupational preparation. The content model provides examples of goals and competencies (objectives) which can provide a basis for local school district career guidance programmes.

- Process Model: These materials suggest specific guidance activities which will assist individuals in mastering the competencies described in the content model. The process model suggests four broad categories of guidance processes: curriculum-based processes; individual development-placement and follow-through processes; on-call responsive processes; and systems support processes.

- Implementation Model: The implementation model suggests four sequential and interrelated steps required to plan and implement a programme using the content and process models. These steps are planning, selecting goals and objectives, matching guidance processes to goals, and implementing the programme.

One of these four programmes briefly described by Gysbers, the *Career Planning Support System (CPSS)*, has shown particularly favourable results in evaluations. It will be further analyzed here as an example of a comprehensive guidance programme.

4. THE CAREER PLANNING SUPPORT SYSTEM (CPSS): A COMPREHENSIVE CAREER GUIDANCE PROGRAMME ADAPTABLE TO LOCAL NEEDS

4.1. CPSS as an Illustrative Innovation

The development of the Career Planning Support System (CPSS) by the National Center for Research in Vocational Education with funding from the National Institute of Education, is an example of a programme development process with supporting materials which is intended to assist local school districts in designing comprehensive career guidance programmes. In response to the need for systematic planning of such programmes the National Center for Research in Vocational Education developed and field-tested CPSS during the years 1971-73. From 1974 to 1976, a field test of CPSS resulted in revision of the materials. During 1978-79, a comprehensive evaluation of the effectiveness of CPSS materials as a career development support system was conducted in eighteen high schools in seven states. On the basis of the data from that evaluation study, CPSS has been approved by the United States Department of Education's Joint Dissemination Review Panel as an educational practice with demonstrated effectiveness which qualifies for national dissemination.

The preface to the CPSS evaluation report (Pearsol, Nunez, Hotchkiss and Padgett, 1979) provides the following description of CPSS:

> The challenge to assist youth in gaining the skills and knowledge to plan for and acquire meaningful careers is a major concern of the educational community...CPSS is a set of instructional materials that shows high school staffs how to deliver improved, cost-effective career guidance services that meet student needs and fall within the resource of the individual school. (p. iii)

4.2. Description of the Career Planning Support System

CPSS is a package of materials produced to assist high school staff in improving the effectiveness of their career guidance programme. The materials describe a process which can be used to develop a systematic plan to guide the organization of a school's staff and resources, so as to meet the career development needs of all students. CPSS assumes that a systematic plan will result in a strengthened career guidance programme and so increase the career planning skills of all students. The systematic plan consists of the following elements:

- An organizational structure facilitating the production of a career development programme which will include clearly designated leadership, permanent active committees and work groups, and administrative cooperation.

- An assessment of the career development needs of local students and use of the results of the needs assessment in the career development programme.

- Creation of explicit career development goals reflecting assessed student career development needs.

- Creation of behavioural objectives designed to implement the goals.

- Creation of student activities to achieve the objectives and goals.

CPSS is produced for the school staff. It contains a package of handbooks, reproducible forms and filmstrips that guide the planning, implementation and evaluation of a high school's career development programme. The following list describes the materials contained in the CPSS package:

- The *Coordinator's Training Guide* is a self-instructional handbook for the part-time CPSS coordinator.

- The *Coordinator's Handbook* contains instructions that describe step-by-step procedures for managing and implementing CPSS in the high school.

- *Camera-Ready Forms* are reproducible copies of each form needed for the questionnaires, instructions, CPSS Programme Information File, etc.

- The *Advisory Committee Handbook* defines the responsibilities and duties of committee members.

- The *Assessing Resources Handbook* guides the resource leader in directing a task force to collect information on and account for the use of resources in the school and the community.

- The *Assessing Needs Handbook: Surveying* provides instructions for preparing, administering, and collecting survey questionnaires for students, graduates, parents, and faculty/staff.

- The *Assessing Needs Handbook: Tabulation* contains instruction on manually tabulating data collected by questionnaires.

- The *Analysing Methods Handbook* directs the methods specialist to report the availability of guidance methods and instructs him/her on how to integrate this knowledge into the construction and review of career development units.

- The *Manual for Writing Behavioural Objectives* is a self-instructional guide for the behavioural objectives specialist.

- *Writing Behavioural Objectives* informs the behavioural objectives specialist about the function of behavioural objectives in the construction of career development units.

- *Producing CDUs (Career Development Units)* provides direction for developing career guidance/development activities.

Furthermore the CPSS package includes a number of filmstrips combined with audio tape presentations. These filmstrips represent the following central themes of CPSS, ranging from a general orientation to the production of career development units:

- AV-1: "An Orientation to CPSS" is designed to orient interested persons or special groups to CPSS.

- AV-2: "Shaping Program Goals" gives an overview of how the needs and resource assessments lead to goals for the school concerned.

- AV-3: "Behavioural Objectives" is to be used with the behavioural objectives manual.

- AV-4: "Producing CDUs" provides an overview of the career development unit process.

4.3 Career Development Goals Addressed by CPSS

Although CPSS is a programme development process, it addresses specific career development goal areas which can provide the basis for conducting an assessment of students' career development needs and for setting goals and behavioural objectives for the local career guidance programme which are based on identified student needs. The focus of such programmes should be on building up developmental skills. CPSS identifies five skill categories as fundamental for the elaboration of career guidance programme goals. They are:

- *Self-Awareness, Social Awareness, and Personal Decision-Making* - skills needed to better understand self-interests, abilities and values, and to make personal career decisions.

- *Career Exploration* - skills needed to find meaningful information about occupations.

- *Job Acquisition and Adjustment* - skills needed to locate, obtain, and adjust to a job, whether it be the first or a subsequent one.

- *Education and Training Exploration* - skills needed to find information about schools that will further the students' education beyond high school.

- *Education and Training Acquisition and Adjustment* - skills needed to locate, enter, and adjust to a school.

From the perspective of CPSS, these five categories of skills or goals represent the minimum career development skills which a school's curriculum should address. CPSS is flexible so that other goals may be added. If a high school, a school district, or a state department of education is committed to other career development skills, these can be accommodated within the CPSS planning structure.

4.4. Steps in the CPSS Planning Process

CPSS involves the use of seven procedural steps which are illustrated in figure 2. These steps are (1) organization of school staff, (2) assessment of resources, (3) assessment of student needs, (4) writing goals and behavioural objectives, (5) creation of career development units (CDUs), (6) annual programme review, and (7) programme reassessment.

Step 1: *Organization of School Staff*. Leadership is required to plan and to sustain the efforts to upgrade a career guidance programme. One person, using the CPSS as a management technique, coordinates the programme development activities. This coordinator may be a guidance specialist or another professional on the school staff. As with any successful school-wide innovation, the school principal must play a clear and supportive role in the use of CPSS. He and the coordinator must work cooperatively throughout the CPSS process. A permanent Steering Committee of five to seven members, an Advisory Committee and two temporary task forces are formed from representatives of the faculty, students and the community. Once this organization of the school staff has been completed, CPSS provides comprehensive directions for completing each of the remaining six programme planning steps. These activities are designed to involve members of the organized planning groups and to share the work load.

Step 2: *Assessment of Resources*. Steering Committee members compile a record of resources available in the school and community that might be used in the career guidance programme. Resources include equipment, space, personnel, funds, and materials. The assessment also includes collecting demographic data describing the school and community, information about current career guidance and career development instructional activities in the state, district, school, and feeder schools (schools which students attend prior to high school), as well as a record of resources expended. A list of important categories of

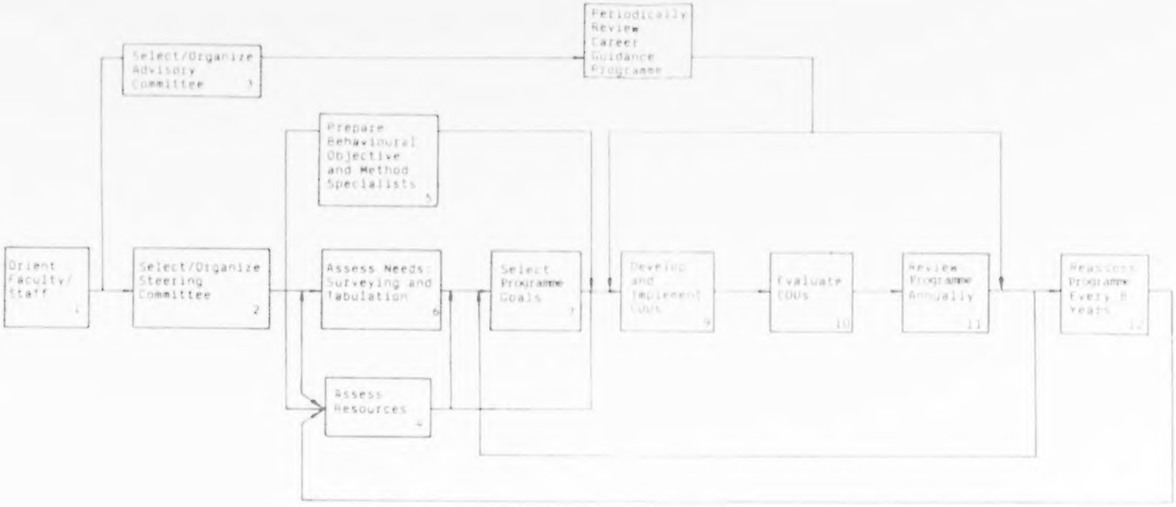

Select/Organize
Advisory
Committee 3
Periodically
Review
Career
Guidance
Programme
Prepare
Behavioural
Objective
and Method
Specialists 5
Orient
Faculty/
Staff 1
Select/Organize
Steering
Committee 2
Assess Needs:
Surveying and
Tabulation 6
Select
Programme
Goals 7
Develop
and
Implement
CDUs 9
Evaluate
CDUs 10
Review
Programme
Annually 11
Reassess
Programme
Every 8
Years 12
Assess
Resources 4

Figure 2: Career Planning Support System

resources in each major category is also part of the CPSS package. This resource assessment provides comprehensive information which will be used later in the planning process to evaluate the feasibility of specific guidance activities which might be used to achieve programme goals.

Step 3: *Assessment of Student Needs*. Assessment of student needs is intended to help identify priority needs for the career guidance programme goals. The Steering Committee members, with the help of other faculty and students, survey students, faculty, recent high school graduates, and parents to determine the career development needs of the student body. The CPSS materials provide complete instructions on how to conduct a needs assessment as well as reproducible master copies of the necessary survey instruments which are used to collect needs assessment information.

Step 4: *Goals and Behavioural Objectives*. Steering Committee members use the results of the needs assessment to specify career development goals and to list these goals in priority order. Priorities are based on both student needs and resources available. After the goals have been listed in order of priority the highest priority goals are translated into behavioural objectives. The programme goals provide the basis for further career guidance programme development activities. CPSS recognizes that the career guidance programme is an innovation which has to be implemented gradually. While the final goal is to develop and implement a comprehensive programme which meets the needs of all students, setting priorities for the goals enables the Steering Committee to develop a time schedule for the design and implementation of specific career guidance activities. The number and type of goals to be implemented are matched to existing resources. The programme can be expanded as additional supportive resources become available.

Step 5: *Creating Career Development Units (CDUs)*. Interested staff, with guidance from the Steering Committee members, design Career Development Units (CDUs). A CDU is a sequence of activities through which a specific, related set of career development behavioural objectives for students can be obtained. Since there are usually alternative methods of achieving programme goals and objectives, the task is to choose instructional or guidance methods that are most appropriate for students. It helps the staff in choosing methods which will use the school resources most efficiently, the CPSS materials describe the components of successful CDUs including goals, objectives, methods, and resources. They state the behavioural objectives to be achieved, instructional methods and resources for each objective, and strategies for implementing the units in the school programme. An example of a CDU might be a career development course or a sequence of related field trips. Completed CDUs are evaluated to determine whether students will achieve the expected outcomes. Additionally, assessments by teachers and students about the usefulness of the CDUs are recorded as they are used in the instructional and guidance programme.

Step 6: *Annual Programme Review*. At the end of each year, the Steering Committee members review the career development programme developed with the aid of CPSS. This annual review includes CDU development and implementation, the status of career development resources, the progress towards programme goals in satisfying student needs, and plans for the following year's efforts. Based on the results of this annual review, a plan for the following year is drawn up. Using this plan, the staff continues developing and modifying CDUs.

Step 7: *Programme Reassessment*. CPSS recommends that a needs assessment be administered every three years. After this period, the data from recent graduates who were introduced to CPSS-derived activities in the previous three years are compared with data from current students to determine if the programme plans initiated through CPSS are successful and if student needs in high priority areas have diminished over the three-year period.

The seven programme development steps which are suggested by the CPSS materials are interdependent. During the first year of CPSS use, most of the effort is directed toward the completion of Steps 1 to 4, i.e. organizing the school staff, assessing resources, assessing needs, and setting goals and behavioural objectives. The first year is the planning year in which the foundation for programme development, implementation, and evaluation is laid. In the next two years of the recommended three-year cycle, the school staff is actively involved in developing, implementing, evaluating, and revising career development units (Steps 5 and 6) which will achieve the goals and objectives developed in Step 3. At the end of this cycle, a new three-year cycle begins with programme reassessment (Step 7) and further programme development activities which are indicated as needed by the results of the reassessment.

4.5. Personnel and Equipment Costs of CPSS

CPSS is based on the premise that change requires systematic planning. This will be most effective if representatives of several groups who have an interest in the programme are involved in the planning process, because this permits a division of labour and creates a group of individuals who have participated in the programme and are ready to accept and use the programme. For this purpose the school administration must be willing to allocate staff time. Because CPSS provides step-by-step instructions and specific programme development materials, such as needs assessment surveys, the amount of staff time required to complete systematic planning is reduced.

The following outline describes the approximate number of staff positions and estimated time requirements over the first year of use of CPSS. It is important to note that the most intensive work is completed during the first year so that the time requirements in subsequent years are lower. The staff positions needed are:

- A CPSS school coordinator at a minimum of one hour per day the first year. This should be part of the coordinator's normal assignment rather than an overtime load.

- Five to seven Steering Committee members (three to five of these will be staff and two will be students) at an average of one and a half hours per week for the first year.

- Ten or more Task Force members (at least five staff and five students) at an average of two hours per week for eight to ten weeks during the first year.

Equipment and supplies during the first year include printing and duplication costs to print the needs assessment surveys, postage to mail surveys to parents and recent graduates, office supplies including letterhead stationery and envelopes, and equipment including a filmstrip projector and cassette tape player. The CPSS materials are available in a kit at a cost of $ 80.00.

The following table provides a summary of costs associated with the use of CPSS for both the first and subsequent years.

Table 1: Cost Estimates per School

	First Year (Nonrecurring Costs)	Subsequent Years (Recurring Costs)
Personnel	$2900-7250	$2175-2900
Staff Training	0	0
Spec. Facilities	0	0
Equipment	0	0
Consumables	123	61
Other Costs	260	60
TOTAL COSTS	$3283-7633	$2296-3021

5. SUMMARY AND CONCLUSIONS

The CPSS is a planning system which is responsive to recent developments in career guidance based on a clearer understanding of the career development process. These new insights call for accountability in the career guidance programme, redesign of the programme to meet the needs of all students, and the use of multiple strategies to produce a comprehensive range of career guidance. Because local school districts have the authority to determine the educational needs of the local community and to establish educational programmes to meet these needs, CPSS does not prescribe a specific curriculum. Rather, it provides the local school staff with a process which helps them to develop a career guidance programme specially designed for local conditions. The premises on which CPSS is based include the following:

- Career development theory and research clarify the nature of the career development process. This knowledge provides a basis for specifying the content of career guidance programmes. CPSS suggests five career development skill areas which can be used to develop goals and behavioural objectives for the guidance programme.

- Comprehensive career guidance programmes result from the use of systematic planning procedures. School staff should be involved in this planning process and they need training and materials to help guide them. CPSS provides both training and support materials.

- Programme development means changes and will be successful only if several key groups, i.e. teachers, administrators, counsellors, parents and students, are involved in the process and if time is allocated to it. CPSS uses a Steering Committee and a Task Force to provide this representation. It also assumes that the school administration is willing to allow release time for staff to use the process and to allocate other resources to support it.

- Comprehensive career guidance programmes must expand the types of guidance strategy used by including other than traditional guidance methods. CPSS supports the design of instructional methods to meet specific career development goals and objectives.

- Local school districts are authorized to develop educational programmes to meet local needs. CPSS suggests skill areas and provides a process for programme planning but allows each school the freedom to make final programme decisions.

- The development of a comprehensive career guidance programme is a gradual process which extends over time. CPSS is based on three-year planning cycles with reassessment at the end of each cycle to obtain information for programme revision and expansion during the next cycle.

APPENDIX: CPSS Programme Goal List

- The student will be able to explore his/her interests, abilities, and values.
- The student will be able to identify and solve personal problems common to young people in high school.
- The student will be able to apply logical steps in making important decisions in his/her life, such as choosing a job, further education, or a place to live.
- The student will recognize how the different attitudes people have towards males and females can affect job, education or training opportunities.
- The student will recognize how different attitudes people have towards racial or ethnic groups can affect job, education or training opportunities.
- The student will be able to deal with situations that he/she may encounter after leaving high school, such as being financially independent, remaining single, getting married, and raising a family.
- The student will be able to use various standard job reference materials, such as *The Occupational Outlook Handbook*, *The Dictionary of Occupational Titles*, and *The Encyclopedia of Careers*.
- The student will be able to identify specific characteristics of several jobs, such as pay, training required, work hours, opportunity for advancement, vacation, and demand for the job.
- The student will be able to identify the general daily activities that are performed in several jobs.
- The student will be able to compare his/her interests, values, and abilities with those needed in several jobs.
- The student will demonstrate his/her abilities to correspond properly with a potential employer by correctly filling out a

job application form, writing a good letter of application, and preparing an adequate summary of his/her qualifications and experience.

- The student will be able to present himself/herself effectively in a job interview.
- The student will be able to locate and use various resources in the community, such as employment bulletins, employment agencies, and people that could assist him/her in finding a job.
- The student will be able to apply problem-solving techniques in order to deal with situations that he/she might find on the job, such as poor communication, prejudice, attitude and value conflicts, getting along with fellow-workers and supervisors.
- The student will be able to identify the characteristics of several different educational or training programmes, such as what jobs they prepare one for, cost of the programme, and what is required for entrance and completion.
- The student will be able to compare his/her interests, values, and abilities with those needed for specific education or training programmes.
- The student will be able to utilize various resources available, such as brochures, catalogues, and people in the programmes, to explore education or training programmes.
- The student will be able to plan courses to take in high school which apply to his/her occupational choices.
- The student will be able to apply for entrance into an education or training programme, by contacting the appropriate person, and correctly completing an application form.
- The student will be able to apply problem-solving techniques in order to deal with situations that he/she might find in education or training programmes, such as getting along with fellow students and teachers and maintaining a good grade average.

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THE CASE STUDY FROM THE NETHERLANDS

Its Profile, Aspects of Cross-National Transferability and Distinctive Features

1. PROFILE OF THE CASE STUDY

The Dutch case study is targeted on a problem area which has created much concern in industrialized countries: the group of 16 to 19 year olds who are bored by their experience in the general school system and whose achievement in traditional school subjects is generally low. These young people are prone to drop out from school and then try to enter an increasingly difficult labour market almost without any marketable skill whatsoever.

It is commonly understood in industrialized countries that the needs of this problem group cannot be adequately served by a "conventional" programme of instruction. Instead a diversification of learning environments has to be envisaged and a long-term solution calls for lifelong monitoring of the development process of these young people starting in early childhood.

The latter aspect lends special emphasis to a main theme of this volume: the establishment of comprehensive systems of lifelong vocational development. However, the focus of the Dutch case study is not on long-term programmes, but rather on direct initiatives responding to the immediate needs of the problem group. A diversified approach is applied which incorporates out-of-school situations as a basis for the learning process and a strong guidance component as its monitoring agent.

The Dutch case study offers a detailed analysis of the educational needs of the problem group of the 16 to 19 year olds. The characteristics of this group are described as boredom in school, dropout from the education system and usually fruitless attempts to acquire stable employment.

"Learning by participation" is the title of a bundle of alternative educational programmes which have been developed since 1969, when Dutch young people demonstrated their dissatisfaction with the official educational policy in a large rally. Compulsory day-release and experience-based learning were the first programmes to be designed by emphasizing the participatory aspects of learning. These programmes had three functions:

- a bridging function, enabling students to enter further education programmes,
- a readjustment function, assisting young people in rediscovering the value of working and studying for a satisfactory career, and
- an educational function, aimed at providing a range of general and vocational education programmes.

The experience with these programmes has been very positive and "learning by participation" programmes have been developed for most levels of the education system. All these programmes have the following features in common:

- The teaching is directed at the whole individual.
- The learning process is aimed at a synthesis of theory, practical application and responsible action.
- The in-school and out-of-school experiences of students are coordinated as closely as possible and they are incorporated into systematic learning processes.
- The role of the teacher is that of a guide.

The two examples of "learning by participation" projects which are described in the case study incorporate all these traits, but they differ in their emphasis on out-of-school learning and on guidance respectively (see Table 1).

2. STAGES OF VOCATIONAL DEVELOPMENT

The Dutch case study serves the problem group of the 16 to 19 year olds at a phase of their development where it has become evident that there has been no well-planned growth of their personal and vocational potentials. One of the reasons for this failure is most probably that the school system did not provide them with a sequenced introduction to their vocational development.

Table 1: Profile of the Dutch Case Study

Brief Overview of Characteristics	
Theme of the Study	Analysis of curricula which have been specifically designed for the needs of the problem group of the 16 to 19 year olds who cannot be attracted by regular school programmes
Age Group Served	16 to 19 years of age
Sponsor of the Programme	Government project with the intention to infuse curricula and materials for the problem group of the 16 to 19 year olds into the regular school programme, wherever needed
Intention of the Programme	Emphasis on learning for real life situations, on addressing the whole person, on readjustment of students to responsibility for their own career planning including the capability of acquiring and holding employment
Specific Traits	The approach is based on combining out-of-school learning with guidance and the acquisition of employable skills A strategy for increasing the learning motivation of potential school leavers

Hence, the question to be pursued here in the first place is not how the stages of vocational development are built into the "learning by participation" concept, but which remedial activities have been designed to counterbalance the absence of vocational development in the initial cycle of education.

It is therefore interesting to observe that the contents of "learning by participation" widely reflect the function of the individual stages of vocational development. Certain attitudes and qualifications deemed to be missing in this problem group of the 16 to 19 year olds are synonymous with the attitudes and qualifications to be acquired through vocational development education in the consecutive stages of the development process.

In fact the contents of "learning by participation" address all stages of vocational development from awareness up to employability, although due to its late start (at age 16), they are designed in a comprehensive, interconnected and chronologically forshortened mode. In particular, a correspondence between the contents of lifelong vocational development and those of "learning by participation" can be demonstrated through the following components of the programme's interpretation of the stages of vocational development:

Vocational Awareness: Making students aware of the importance of a vocational career and of the need to plan it carefully.

Vocational Systematization: Imparting to students knowledge about categorizations in the world of work and about human capabilities and aspirations, and enabling them to apply this knowledge to their own situation.

Vocational Experimentation: Providing students with opportunities to gain experience in real work situations and teaching them how to benefit from this experience in their vocational decision making.

Employability: Enabling students to acquire job-seeking skills and employable skills which will give them a good chance of obtaining employment in a field of their choice and of progressing in it.

3. ENVIRONMENTS OF VOCATIONAL DEVELOPMENT

When attempting to serve the problem group of the 16 to 19 year olds it becomes evident that one of the main deficiencies of the general school system is the lack of involving out-of-school environments in the instructional process. Only through out-of-school learning can the whole personality of the student be addressed in his or her daily life situation.

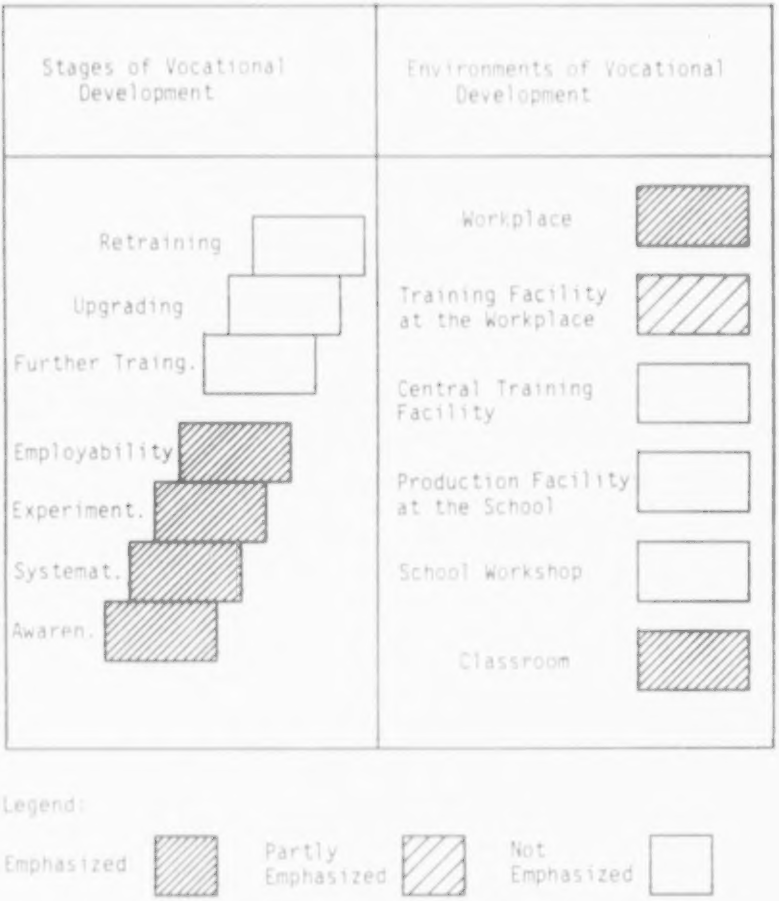
Therefore the concept of "learning by participation", while remaining school-based, makes use of the students' motivation in the real life situation by utilizing a variety of out-of-school environments to keep them in fruitful contact with areas of daily life which call for personal action, such as choosing a career and entering into employment.

"Learning by participation" is intended to keep the verbal approach at a minimum and to encourage students to learn to solve practical problems by discovering solutions for themselves. For this purpose in-school learning is combined with out-of-school practical experience in a variety of learning environments.

Consequently the student is guided through a rather complex, compound system of learning environments, where he or she becomes familiar with critical decision-making processes. "Learning by participation" has a strong built-in guidance component, in which the teacher/counsellor assists the students in the choice of out-of-school learning opportunities and in drawing personal conclusions from their experiences.

This monitoring process of interrelating a wide variety of out-of-school learning experiences supplemented by in-school learning constitutes the core of "learning by participation". In pursuing this approach the concept makes little effort to specify different categories of out-of-school environments or to describe the arrangement of compound systems which interconnect the learning environments.

"Learning by participation" can thus be viewed as creating a learning foundation of all available resources which can be drawn upon whenever needed for a systematic sequence of learning experiences. The highly individualized arrangement of such learning sequences can only be maintained with the help of well-organized guidance services.


Stages of Vocational Development
Environments of Vocational Development
Retraining
Upgrading
Further Traing.
Employability
Experiment.
Systemat.
Awaren.
Workplace
Training Facility at the Workplace
Central Training Facility
Production Facility at the School
School Workshop
Classroom
Legend:
Emphasized
Partly Emphasized
Not Emphasized

Note: The contents of the stages "awareness" to "employability" are comprehensively combined in one programme. "School workshop" includes "student experiment laboratories"; "classroom" includes "demonstration laboratories".

Figure 1: Dimensions of Vocational Development Emphasized in the Dutch Case Study

Hence the organizational structure of "learning by participation" projects conveys valuable insights into the administration of learning in different environments. In the absence of a rigid scheme of learning environments it has to be the function of guidance to design, implement and monitor individualized arrangements for learning experiences.

4. DISTINCTIVE FEATURES OF THE CASE STUDY

It is the goal of "learning by participation" to make education meaningful and attractive for young people who are bored and frustrated by the regular programme of the public school system. They should be able to understand their situation and to follow a well-considered plan for developing their career prospects; they should also be endowed with job-seeking and employable skills as a basis for successful entrance into the labour market.

The concept of "learning by participation" attempts to reach this goal by offering a highly flexible and individualized organization of learning. The approach to designing these learning processes involves the whole individual by integrating theoretical instruction and practical experience in in-school and out-of-school learning environments. Extensive guidance services provide the agent needed for monitoring such a programme.

Moreover it is of particular interest to see how intensely guidance services and out-of-school learning are interrelated. Four counselling interviews (initial, interim, evaluative and final) are conducted during each out-of-school period. They are designed to direct the student's learning experiences into meaningful steps in his or her development process.

In approaches similar to this innovation project in the Netherlands other industrialized countries have made great efforts to assist 16 to 19 year olds with their problems of finding a meaningful role in society. Concepts such as career education, recurrent education, community involvement education and alternative education have all to a marked degree been targeted at solving the problems of a sizable number of young people in this age group. When compared with these concepts "learning by participation" has to be viewed as outstanding in its flexibility of arranging different programme components and in the degree of individualized learning which it offers.

LEARNING BY PARTICIPATION
A RENEWAL PROJECT IN THE DUTCH EDUCATION SYSTEM

by

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GLOSSARY OF TERMS

Dutch Terms	Abbreviations	Equivalent English Terms
Lager beroepsonderwijs	L.B.O.	Junior vocational education
Middelbaar algemeen voortgezet onderwijs	M.A.V.O.	Senior general secondary education
Hoger algemeen voortgezet onderwijs	H.A.V.O.	Higher general secondary education
Voorbereidend wetenschappelijk onderwijs	V.W.O.	Pre-university education
Middelbaar beroepsonderwijs	M.B.O.	Senior vocational education
Hoger beroepsonderwijs	H.B.O.	Higher vocational education

1. NATIONAL CHARACTERISTICS AS BACKGROUND FOR THE DISCUSSION OF VOCATIONAL DEVELOPMENT

1.1. Geographic and Demographic Situation

The Netherlands is located on the North Sea coast of Western Europe. It borders on West Germany to the east and on Belgium to the south. The capital of the Netherlands is Amsterdam and the seat of government is The Hague. It is a relatively small country with a surface area of only 33,612 square kilometres and an extremely high population density. The population has risen fairly rapidly since the nineteen-fifties, which can be accounted for by a major fall in the mortality rate, while up to the seventies there was no noticeable drop in the birth rate.

There is a special concentration of population in an area in the west, usually referred to as the Randstad, an agglomeration of towns and villages with a population density of about 2,700 inhabitants per square kilometre. It is one of the most highly urbanized areas in the world.

In the late seventies the population increase reached its peak, and the population is currently estimated at about 14 million. Recently, the birth rate has also dropped sharply, so that it is now in better equilibrium with the mortality rate. However, there has still been an unexpected increase in the population due to the fact that more and more foreign workers, mostly from the Mediterranean countries, are bringing in their families to make a permanent home for themselves in the Netherlands.

1.2. Socio-Economic Structure

Beside its high population density another distinctive national feature of the Netherlands is its network of waterways with access to the open sea. Because of its geographical location the Netherlands has been a major trading nation through the centuries. Today it is one of the countries which constitute the European Economic Community, and it ranks among the richer members of this political and economic entity.

The country has a high level of industrialization maintained by extensive investments in the education of the workforce. However, mechanization and automation of trade, industry and agriculture as well as the relocation of major companies to low-wage countries have increased the problem of unemployment.

Furthermore, the labour market has undergone major structural changes in recent years. Together with a decrease in the total number of employees and a rising level of specialization, manpower demand has shifted towards a wide range of services -- banking, insurance, government, and public operations -- and away from the agricultural and industrial sectors.

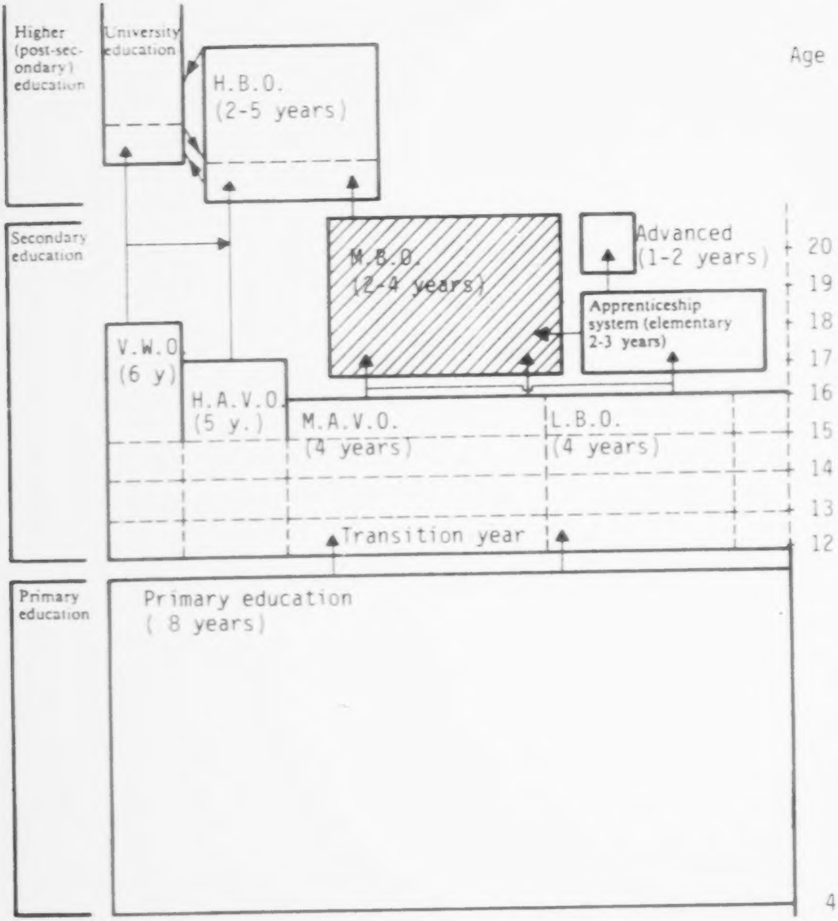
1.3. The Dutch Education System

The Dutch education system of today is geared towards the needs of a highly urbanized and industrialized country. It is a complex system with differentiated course offerings at the secondary level and a variety of non-formal programmes.

Before the age of entry to primary education, playgroups are increasingly being organized for toddlers from 2 to 4 years. Between a child's fifth and sixteenth birthday education is compulsory, including eight years of primary education. Educational provision for this age group includes special education in separate schools. This service is provided for one out of sixteen school children.

Due to a current reform movement, attempts started in 1985 to abolish the existing division into nursery schools, primary schools and special schools up to age 12. The new-style primary school is intended to serve all 5 to 12 year olds (see Figure 1).

In secondary education a highly diversified programme is offered. It comprises pre-university education (VWO), general secondary education and vocational education. General secondary education is further differentiated into higher and intermediate secondary general education (HAVO and MAVO), and vocational education is offered at a higher level, senior level and junior level (HBO, MBO and LBO).


Higher (post-secondary) education
University education
H.B.O. (2-5 years)
Age
Secondary education
M.B.O. (2-4 years)
Advanced (1-2 years)
Apprenticeship system (elementary 2-3 years)
V.W.O. (6 y)
H.A.V.O. (5 y.)
M.A.V.O. (4 years)
L.B.O. (4 years)
Transition year
20
19
18
17
16
15
14
13
12
Primary education
Primary education (8 years)
4

Source: *The Development and Position of Vocational Training in the Netherlands*, DOCIFORM No. 308 E, Ministry of Education and Science, The Hague, 1976, p. 6. (Updated 1988).

Figure 1: Structure of the Dutch Education System

The first year of secondary education ("transition year") is an orientation and guidance year. This transition period has the following three functions:

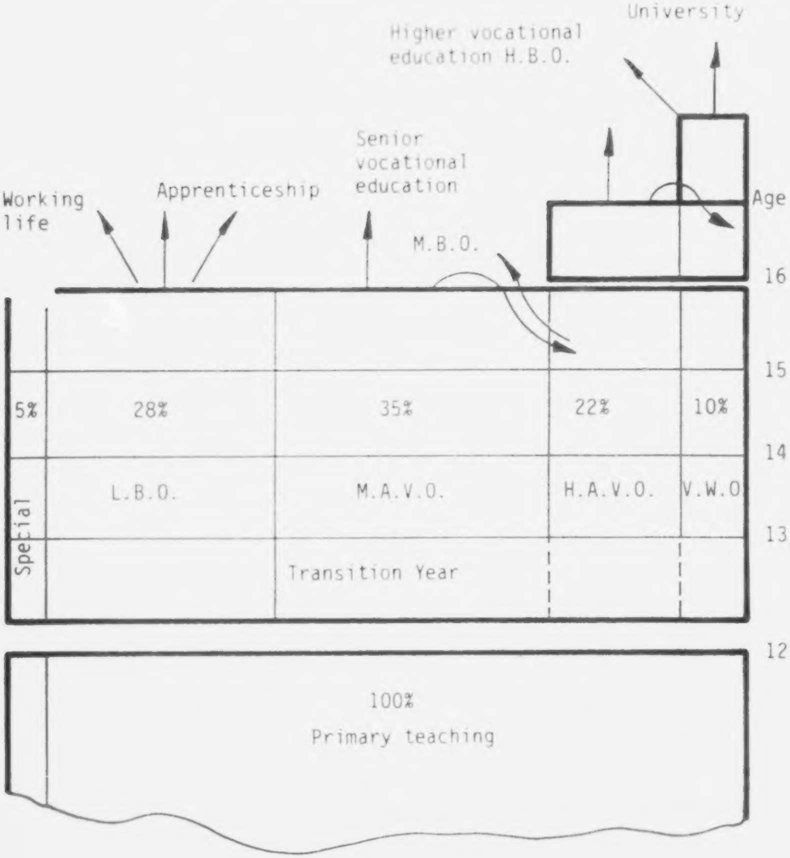
- it is designed to allow the skills and interests of the students to emerge so that it can be decided which subjects are appropriate for each individual student, and at what level;
- students can become familiar with their new school and its new demands in the way they think and work, they can adjust socially, they can get used to the system of special subject teachers, etc.;
- it renders the possibility of referring students to other types of school on the basis of their achievements.

After the transition year students can opt for a specialization towards either general education or vocational training. Considering the needs of the research study for which this report is being prepared, further descriptions will be restricted to junior and senior vocational education.

Junior vocational courses take four years. In the first two years the emphasis is on general education and in the last two years on basic vocational training.

Junior vocational education is not of a specialized nature but prepares students for vocational training proper on the basis of their individual potential. On completing a junior vocational programme, students are not qualified craftsmen, but it does provide them with sufficient background to enable them to become fully qualified through the apprenticeship training scheme or through further study in a short or standard senior vocational programme.

There is a great variety of types of senior vocational schools. Since they differ as to course duration, content and level, there is no uniform examination system as there is for junior vocational education. A feature of these senior vocational programmes is that all students spend some time in trade or industry during their training. In principle, the diploma qualifies students to perform a job and allows them to go on to higher vocational education or to types of vocational training under the apprenticeship training system.


University
Higher vocational education H.B.O.
Senior vocational education
Working life
Apprenticeship
M.B.O.
Age
16
15
14
13
12
5%
28%
35%
22%
10%
L.B.O.
M.A.V.O.
H.A.V.O.
V.W.O
Special
Transition Year
100%
Primary teaching

Source: Yves Deforge. *Preparation for Working Life: Visit to the Netherlands.*

Figure 2: Percentage of Student Population in Programmes of Secondary Education

From the structure of the Dutch education system it becomes evident that the diversification of programmes in lower secondary education and at the end of compulsory education (age 16) requires crucial decision making by the students. Figure 2 explains the composition of student attendance in the programmes of lower secondary education.

In the school year 1983/84 the total student population in junior vocational programmes (LBO) numbered 402,735, while 226,683 students were attending courses in senior vocational education (MBO). (*Verslag van het Onderwijs in Nederland 1983)*

2. CURRENT PROVISION OF VOCATIONAL PROGRAMMES FOR THE EXPECTED CLIENTELE OF THE INNOVATION PROJECT

2.1. Sources of the Clientele

The innovation project analyzed here is designed for 16 to 19 year olds. The beginning of the 17th year marks the end of the period of compulsory schooling. Young people in this age range, therefore, may be categorized as follows:

- those who continue their studies full-time and who are not employed,
- those who continue their studies part-time and are employed,
- those who continue their studies part-time and are not employed, and
- those who are neither studying nor employed.

Under the current labour laws, working people under the age of 18 (young working people) are entitled to attend an educational establishment for 8 hours per week. This law has been effective since 1969. The regulations of the Compulsory Education Act have greatly increased the number of young working people entitled to attend an educational establishment full-time or part-time. At the moment about 38 per cent of all young people between 16 and 18 fall into the "young working people" category. The total number is about 200,000 with girls outnumbering boys by 3 to 2. On the whole, school attendance is decreasing sharply between the ages of 16 and 19.

2.2. Educational Facilities for the Clientele

Figure 1 indicates the current provision for 16 to 19 year olds within the formal education system. Students from lower social classes usually attend MAVO and LBO schools rather

Table 1: School Attendance by 16 to 19 Year Olds as a Percentage of the Total Population of this Age Group in the Netherlands (1982)

Type of School:	Full-Time	Part-time	Not in School
Age			
16 years	92	6	2
17 years	74.5	10	15.5
18 years	52.5	10.5	37
19 years	34.5	19	56.5

Source: Data of the "Adviesgroep Projecten, 2e Fase van het Voortgezet Onderwijs", Note by Jef Coopmanns, September 1984

than the more academic HAVO and VWO schools. The reverse is the case for students from higher social classes. Only three per cent of the university population comes from the lower social classes.

Parallel to these institutions for full-time education, there are educational facilities for young people between 16 and 19 who are already working. Under the part-time compulsory education ruling they often have to attend an educational establishment one or two days a week. The majority of them have graduated from junior vocational schools (LBO) or intermediate secondary general schools (MAVO). These young working people have two options for further education or training:

- the apprenticeship training system and courses provided under this scheme, and

- educational courses for early school-leavers.

The apprenticeship training programmes operate within a dual structure. The practical training in a company is supplemented by theoretical training at an apprenticeship training school. The apprentices are on contracts which entitle them to receive practical on-the-job training in a particular vocation. The corresponding general and theoretical instruction is then provided in a school setting. The average duration of the agreement, in which the rights and obligations of all those involved are stated, is two years. The situation of apprentices is peculiar in that besides their contract for training they also have a contract for employment and are thus in the dual position of being apprentices on the one hand and employees on the other.

Apprentices are trained in the practical aspects of a trade or craft under the responsibility of the employer. In some companies special sections have been set up for the practical training to improve standards. Also, a government training consultant provides the employer or his training manager with a programme outline based on a list of training objectives.

On the whole the government training consultant carries out the following tasks:

- encouraging the training of prospective skilled workers in their particular branch of industry,
- helping to draw up the practical programmes,
- scrutinizing the training opportunities in a company,
- advising the company's management, so that the apprentice is given the best possible training to become a skilled worker, and
- setting the examinations.

In addition to the services provided by the government training consultant, the apprentice is assisted by a counsellor. He provides the apprentice with information about training opportunities and gives advice if there are problems at schools or with the practical training. He acts as a mediator between the apprentice and the local employment office.

The theoretical part of apprenticeship training is provided at schools on the basis of the practical experience gained at the workplace. The vocational schools are attended for one or two days a week.

The majority of the theoretical courses provided under this scheme adhere to the following timetable:

- 6 hours of related theory,
- 2 hours of social training through project work,
- 1 hour of physical education.

In designing courses for the vocational school the following orientation marks are observed:

- instruction should be related to real life: the courses should be relevant to the experiences of the young people at work and in their daily life;

- instruction should be integrated with practical experience: as far as possible, the training should appear to trainees as an integrated whole; all the school subjects constitute the background to what the trainee does at work;

- instruction should be individualized: the courses must take account of differences between the students as regards pace of study, interest, motivation, previous experience at school and potential for achievements.

Practical work in school workshops is a major aid for achieving these training objectives. The verbal approach is kept to a minimum. It is intended that trainees should learn to solve practical problems by discovering solutions for themselves.

The training programmes available under the apprenticeship training scheme are shown in Table 2.

Educational courses for early school leavers (short MBO) have been introduced only in recent years. They are geared towards dropouts in the age group of 15 to 18 and are designed as part-time courses including non-vocational contents.

The educational experience of the clientele for these courses is minimal. These young people are either not interested in enrolling in a vocational programme or they do not have the capacity to be trained to become skilled workers. Many of them perform unskilled work in industry or other work settings.

The short MBO programmes which are designed for the needs of these young people have a duration of two years. Through an open curriculum these programmes aim to achieve the following objectives:

- to ensure that the young people actively participate in the community;
- to provide them with an understanding of their own position; to inculcate critical awareness;
- to help them to discover their own prospects at work and in their private lives;
- to give priority to personal development by minimizing instruction in what they should do.

The programmes have a strong integrated guidance component. The point of reference for the counselling process is the daily life of the young people. The process endeavours to elucidate what is often an extremely complex society for these boys and girls. Many elements which are related to group dynamics emerge in this process, such as:

- consulting one another,
- listening to one another,
- making agreements,
- recognizing initiatives and taking them up,
- accepting criticism,
- analyzing all possible obstacles.

These aspects are conveyed through group discussions, creative play and physical education. In addition, a great deal of attention is paid to social and political training and information on work and careers.

In the early seventies these programmes were very popular (49,000 students in 1972), but they lost their attraction in

Table 2: Overview of Apprenticeship Training Programmes by Duration of Programme

1 Year Programmes:	food production specialist, dairy specialist,
1-2 Year Programmes:	family health care assistant, ready-made clothing maker,
1-3 Year Programmes:	road paving, driver of heavy equipment, shoemaker, stitcher, textile processing, needle work, burler, darner.
2 Year Programmes:	waiter, cook, mechanic, hairdresser male/female, bakery/confectionery, sugar processing, chocolate processing, tailor.
2-3 Year Programmes:	carpenter, mason, shuttering for concrete, steel meshing for concrete, tiling, stone mason, crane driver, painter, plaster worker, terrazzo paver, cabinet maker, ship's carpenter, wallpapering/upholstering/soft finishing, car body worker, timber processing, motor vehicle mechanic,

motor vehicle electrical repairs,
body work mechanic,
maintenance mechanic,
gas fitter,
water fitter,
plumber,
turner,
sheet worker,
machine fitter,
structural fitter,
shipbuilding,
fine metal work,
agricultural machinery mechanic,
telecommunications mechanic,
instrument maker,
electrician,
shoemaker.

3 Year Programmes: optician,
butcher,
meat processing,
dock worker.

2-4 Year Programmes: intaglio printer,
type setter,
book printer,
engraver with chemical processes,
paper processing.

the late seventies (21,151 students in 1977) because of an increasing interest of young people in full-time education and in apprenticeship training. In 1982 enrolment in educational courses for early school-leavers numbered 21,175.

2.3. Obstacles to Providing Adequate Programmes for the Clientele

During the students' years in school, an endeavour must be made to ensure, through continued guidance, that they become increasingly aware of their role in the community and that they contribute towards the development of society. There are a number of obstacles to this aim in the education system as it stands at present, such as:

- Teaching often involves a rigid separation of subjects and is hardly ever linked to the problems that students encounter in their daily lives. The result is that they do not learn to regard the subject matter as a means of helping them to understand and cope better with reality. They are thus in danger of becoming alienated from the school.

- Students have many significant and useful experiences outside school. Yet the structure of the curriculum makes it difficult if not impossible to link this spontaneous and intuitive learning with formal learning at school.

- Many students are not stimulated by school because they are expected to meet standards and measure up to values set by the educational establishment.

These problems result in many students not feeling at home at school and not being motivated to learn.

In recent years young people have been hard hit by cyclical fluctuations in the economy. During the economic boom there was extensive manpower demand whereas during the present recession the number of vacant positions has diminished and a growing number of young people are unemployed.

The purpose of education is increasingly to prepare people to stand on their own feet in society. Parallel to this social aspect, the less specialized training has come to be postponed to an ever later age, and much of it is now provided at age 16 to 18 and 19. The result of this change has been that for certain categories of young people a discrepancy has emerged between the knowledge and skills they possess and the qualification they need for a specific job. For early school-leavers this has the disadvantage that they enter the labour market with minimal vocational preparation. At a time of economic recession the chance of these young people finding work is extremely small.

Furthermore, there are a number of other factors which also lead to youth unemployment:

- employers are hesitant to hire young people, because minimum wages are relatively high,

- the high level of unemployment benefits establishes them to some extent as an alternative to employment,

- the attitude of many young people towards accepting work has changed--they are more selective,

- there is a reduction in the number of jobs available because of technological change, automation etc.

In July 1980, 190,000 young unemployed people were counted, but certain categories were not included in this figure, such as those temporarily unavailable (through illness), those looking for part-time jobs and those not registered with a local employment office. Altogether this would probably imply a doubling of the number which has been quoted above.

It is vital to know whether these young people, who make it perfectly clear that they are not interested in full-time education, have any other features in common. The majority of them are the children of manual workers; such children are inclined to leave school earlier than children from higher social backgrounds. As a general rule personal development in these circles is based less on the individual's experiences and much more on traditional values. Characteristics of the behaviour of these young people are:

- passive attitudes and behaviour, and preference for association with family and neighbours,

- the use of a restricted language code peculiar to their social class,

- little career ambition or political involvement,

- early marriage and children,

- belonging to a cultural minority group.

This background has a particularly strong influence on the choice of the kind of secondary school to be attended and on the decision when to leave the education system. These two decisions are of fundamental importance for young people's careers. All the above factors influence young people towards a decision to leave school early, with every chance of becoming unemployed either immediately or in the future.

3. THE CONCEPT OF LEARNING BY PARTICIPATION

3.1. Points of Departure for the General Reform of the Education System

The government has put forward constructive proposals about the organization of education. Seven years after the crucial Secondary Education Act was passed in 1968, a discussion document ("Contours of a Future Education System") appeared, which proposed a restructuring of the education system, to be carried out gradually and to be completed by the year 2000.

The plan is based on five fundamental assumptions:

- All Dutch citizens must be given the greatest possible opportunity to prepare themselves for their future role in the community. In order to achieve this a type of basic education should be developed which should be open to all children from 4 to 16. It should provide for individual differences in aptitude, interest and pace of learning, irrespective of social background and sex. In order to avoid unduly premature selection there should only be one type of school.

- The education system should provide opportunities for vocational training after the age of 16.

- The education system should create opportunities for further education.

- All forms of further education should be geared to social reality.

- There should be facilities for education and training throughout adulthood.

"Basic education" comprises primary education for 4 to 12 year olds and the first stage of secondary education for 12 to 15 year olds. The first step towards the new education structure was taken in 1985, when the new primary school opened its doors to all children from 4 to 12. In 1989 a decision will be taken on the definitive form of secondary education for 12 to 15 year olds.

"Further education" comprises the second stage of secondary education, higher education and adult education. For the purpose of this report further attention will be devoted only to the second stage of secondary education.

The second stage of the secondary school offers three types of course:

- a theoretical course, preparing students for higher education;
- a medium-length vocationally oriented course that prepares students for middle-level positions;
- a short vocationally oriented course that prepares students for entry-level occupations.

Students will be awarded certificates stating the course taken, core and optional subjects, the level which has been successfully completed and the student's marks.

In organizational terms the Government is in favour of combined schools which incorporate the existing types of school in a single establishment. While in basic education the emphasis is still on teaching, independent study combined with guidance is the prevailing approach in the second stage of secondary education.

3.2. The Development of Compulsory Day Release/Experience-Based Learning

The Labour Act of 1919 providing for entitlement to one day's education or training per week was not always adhered to. In the following decades young working people became increasingly dissatisfied with the Government's education policy, and on 1 November 1969 ten thousand of them demonstrated against it in The Hague. Their protest was successful. The Government decided to make improved educational provision for 15 to 18 year olds.

Young working people preferred part-time educational facilities, such as the apprenticeship training system, courses provided by the apprenticeship training schools and courses offered by institutes for early school-leavers. This inclination of young working people became the starting point of the development of compulsory day release and experience-based learning.

Shortly after the campaign conducted by the young people, a document was published by the Government introducing the concept of compulsory day release or experience-based learning, a form of education specially designed for practically-oriented people. Both types of part-time education (courses for early school-leavers and courses at apprenticeship training schools) have since been accorded a major role in the development of "learning by participation", but both are felt to be too one-sided on their own. The intention has, therefore, been to combine the two and to develop a new type of part-time course which will offer young working people a good integrated education. In these courses of the short MBO category young people's potential is catered for by various kinds of training coupled with practical work.

A feature of experience-based learning is that the personal and social situation of the young person is taken as the point of departure for education. The central educational principle of learning from experience can be defined as learning which is encouraged by being interspersed and interwoven with work and other outside activities. The programme comprises a general education part and a vocational part, and has three functions:

- a bridging function, designed for students whose previous qualifications do not permit them to move on to certain types of further education,

- a readjustment function, aimed at young people who choose to do a certain type of work at an early age because full-time education does not adequately meet their needs and potentials; experience-based learning combined with personal guidance should remotivate these young people so that they can make sound decisions about their future,

- an educational function, aimed at providing a wide range of programmes, both general and vocational.

The teaching and learning situation in experience-based programmes is constituted of in-school learning and a supplementary out-of-school practical component. The aim is to provide structured learning experiences in a combination of different learning environments. The school is taken out of its social isolation and young people's life in the community provides cues for the learning process.

In addition social learning is emphasized. However, this does not involve specially designed learning situations but simply participation in various kinds of community life, such as the neighbourhood, hospitals, clubs etc.

Through these experimental programmes enough experience should gradually be gained to introduce experience-based learning into the entire Dutch education system. By 1990 it is expected to encompass the whole system of secondary vocational education (MBO).

Such a broad implementation of experience-based learning would also avoid a dichotomy between practically-oriented and theoretically-oriented young people. Such a dichotomy was anticipated by critics of introducing "learning by participation" for only a certain part of the student population.

3.3. Towards a Description of "Learning by Participation"

The essence of "learning by participation" is that both the subject matter and the learning process are connected with the experiences that students gain in the practical world outside school. All the conditions for learning inside school and outside school are described in the school work plan. The in-school and out-of-school learning activities are programmatically intertwined.

In drawing up the school work plan four educational premises have been adopted:

The teaching is directed at the whole individual. Inside and outside the school, students are called upon to respond as individuals, thinking, feeling, acting and judging simultaneously. This total involvement is a feature of spontaneous and intuitive learning. The whole individual must be addressed outside school and also by the more systematic and deliberate learning in school.

The learning process is aimed at a synthesis of theory, practical application and responsible action. The totality of life situation has to be reflected in the learning process. In particular a split into theoretical subjects and practical application has to be avoided. Guidance for responsible action must also form part of the learning process.

The in-school and out-of-school experiences of students should be coordinated as closely as possible and incorporated into systematic learning processes. The principle of "learning by participation" means that the content of teaching is primarily determined by or derived from situations in which students find themselves. Wherever possible, learning activities are selected and arranged on the basis of the student's practical experiences.

The role of the teacher is that of a guide. Guidance takes the form of support for the student and his or her development. The main point is that the teachers should focus their efforts as far as possible on the needs, interests and potential of the individual student. This calls for an extensive individualization of the learning process.

The operationalization of the four premises can be worked out in detail in the programmes in accordance with the emphasis that the students place on each of them. For this process they will consult with their guide/teacher. On the whole the following programme areas are available: general social studies, career guidance, and vocational training.

For each programme the learning goals and the subject matter are presented in programme units. These are coherent sets of in-school and out-of-school learning activities geared to a combination of learning goals. Successful completion of a programme unit is rewarded with a credit.

Each programme unit is based on a practical situation. Such a situation is usually briefly explored through practical observation. Next the student works in the production process under conditions which have been arranged beforehand. And finally the unit may include the performance of social services such as campaigning for environmental protection.

The mission of "learning by participation", to achieve a better understanding of one's own roles and those of others through guided personal and social experience, requires careful planning and programming of activities. Objectives have been defined to assist in achieving this mission. They are as follows:

- Technical and skilled activity: The ability to carry out a particular task, e.g. using a particular instrument, making a calculation, writing a letter of application, etc.

- Communication: The ability to cooperate and interact with others, e.g. conduct a discussion, listen, adhere to a code of behaviour in social intercourse, etc.

- Acting in relation to the existing labour and power structure: This aspect assumes a knowledge of and insight into the workings of social institutions, e.g. the way in which the collective labour agreements work, the process of political decision-making, the roles of men and women, etc.

- Judgement: This aspect refers to taking a stance or forming an opinion on the diverse aspects of behaviour, e.g. coping with conflicts, adopting an attitude towards youth unemployment, etc.

- Acting to change a situation: This assumes the ability to change one's own situation and/or the situation of others, e.g. through negotiations, through being an active member of an organization, taking the initiative, etc.

These objectives are applied when the individual study plan is designed. This plan should correlate with the student's needs and potential abilities. Personal data, such as the student's case history, career prospects and capabilities, are consulted when the plan is drawn up.

3.4. The Development Strategy for "Learning by Participation"

As an initial experiment "learning by participation" was launched in five schools in 1974. The results of this experiment were used to formulate an innovation policy for the 16 to 19 year olds.

This experiment was developed out of the experience-based learning project which had been established in 1970 as a consequence of the The Hague student demonstration a year before. From this time on young working people became the main concern of the Government's education policy.

Between 1975 and 1983 the Ministerial Innovation Committee worked out details for these new forms of education. The guiding principle was experience-based learning. In this concept learning and participation in social processes have to be merged and the teaching has to contain both general educational elements and a vocational orientation. The endeavour has become increasingly difficult in recent years because of rising unemployment. It is more and more difficult for students to find a job, and they have only few chances of acquiring practical training in industry.

On the recommendation of the Innovation Committee, the Government gave several schools the opportunity of setting up a two-year full-time course, (the short senior vocational course, MBO), alongside the part-time course. The major difference between these two courses was that the students attending the full-time one were no longer 'employees' and did not have a job but remained students for the entire duration of the course. They could achieve the same final level on the new full-time course because they gained practical experience of the same standard through a variety of out-of-school contacts. The main out-of-school methods were excursions, observation, interviews, accompanying employees at work, traineeships, and carrying out projects. In addition, the Government was attempting to interrelate these parallel courses as far as possible in terms of their institutional basis, their content, methods, testing and the awarding of diplomas.

The idea behind all this was that as soon as the economic situation improved, students doing the full-time course could switch to the part-time course and thus finish their training. By the same token students who had initially opted for the combination of working and learning needed no longer fear that their training was in jeopardy when they lost their job. They could then finish their training in the full-time course. This innovation entirely fitted in with the concept worked out in detail in the Contours Memorandum which proposed a system of basic education for 4 to 16 year olds followed by a minimum of two years' vocational training, either full-time or part-time. In 1984 the number of experimental institutes for short vocational education (short MBO) was 52 for full-time education and 30 for part-time education. Based on the experience gained with this approach it became the Government's aim to introduce the method of "learning by participation" in all types of education for 16 to 19 year olds. To this end, ten senior vocational programmes have been tried out since August 1980 and have provided further experience with "learning by participation". Meanwhile the Government has developed models for introduction into other school programmes.

4. EXAMPLES OF "LEARNING BY PARTICIPATION" PROJECTS

Two examples from different towns in the Netherlands will illustrate the operationalization of particular aspects of "learning by participation".

4.1. Emphasizing the Guidance Component: The Emmen Experiment

The Emmen experiment is composed of a number of experimental projects. It grew from an initiative to establish some form of link between the courses for early school-leavers and the apprenticeship training courses. The experiment was set up in the first instance to develop new-style part-time courses for young working people. At a later stage of the project full-time courses were also developed. They were designed along the lines of the experience-based learning/compulsory day-release model.

The Emmen experiment gave special consideration to guidance. One of the experimental projects in the school was the "information and bridging project", designed for students who had either completed or failed to complete their previous training and who had not yet opted for a career or for further training. Alongside the development project the Emmen experiment also included vocational training programmes for students who were ready to continue with training after completion of the "information and bridging project".

The "information and bridging project" had the following aims:

- to develop programmes oriented towards occupations and society and geared towards students' individual career options,

- to create an adequate number of options for students so that they could proceed to the vocational training suitable for them,

- to develop an individual counselling system so that shape could be given to the individual student's further education and vocational career.

The counselling process focused primarily on helping students to make choices. It concentrated on the choice of a career by means of short introductory courses, or on the possibility of further education or training. Students learnt to widen their horizons and to deal with information about their own situation. With a broader outlook and greater self-awareness, they were better able to make decisions about future career plans and to opt for a particular programme in further education or training.

The programme was highly individualized; during the school year the students had experience of a maximum of five out-of-school learning situations related to their social and/or career orientation each with a duration of six weeks. These experiences largely determined the content of the school programme.

Furthermore, during the whole process a great deal of attention was paid to choices by the student, with the aid of a variety of counselling interviews. The interviews were designed to bring the students into contact with the community. They assisted them in the following ways:

- Providing a survey of the options: In order to make vocational choices, students have to be aware of the alternatives from which they can choose. Career guides, youth consultants from the local employment office and career exhibitions help to bring these alternatives into focus. Furthermore, an initial cycle of interviews makes it possible to take account of any latent aspirations towards a particular career.

- Eliminating unfeasible options: A number of options will not be feasible propositions for certain students because they do not have the requisite previous training and do not wish to embark upon a new training course.

- Appraisal of factors which appeal to students with regard to occupations: In order to be able to make a choice, students must know which aspects of work are important to them, such as clean work, a moderate or rapid pace etc.

- Matching own capabilities and aspirations with feasible options: It is important to confront the student's own image of an occupation with the reality of the particular career.

- Appraisal of alternatives in vocational choice: Students should remain aware of possible alternatives. This ensures that their field of vision remains broad and they need not be disappointed if one of the options has to be dropped.

- Assessing the feasibility of the options in the labour market: The feasibility of alternative careers is determined by factors such as ability, tenacity, effort, exactness, trends in the labour market, admission requirements for certain training courses, geographical location etc.

- Weighing personal views against the views of others: Whilst the students basically choose for themselves, the choice is also determined by the response from one's environment. Once a choice has been made, therefore, it must be firm enough to withstand new reactions. A girl who opts for a traditionally male province should be aware that there may be a negative response from certain quarters.

- Deciding on a plan to achieve the option chosen: During the last stage of the programme a plan should be drawn up specifically geared to the student's wishes and potential. The plan indicates all the steps to be followed by a student to achieve his or her vocational goal.

Four counselling interviews (initial, interim, evaluative and final) are conducted during each out-of-school period. This sequence of interviews is designed to monitor the student's performance outside the school. The final interview has the function of evaluating the student's activities with the help of all individuals who were involved in this out-of-school period.

4.2. Emphasizing Out-of-School Learning: The Tilburg Experiment

One feature of the concept of "learning by participation" was explored in the last chapter: the personal guidance given to students during the learning process. This section examines a second principle: learning in an out-of-school practical situation. The aim of out-of-school learning is to bring students into direct contact with a selected part of social reality for a shorter or longer period in such a way that educational aspects of it can be used for the further development of the student's individual potential.

Originally the Tilburg experiment went through a process of development similar to that of the Emmen experiment. In the initial phase of the experimental work efforts were concentrated on improving vocational training for students who were both working and attending school. Then concern gradually shifted to developing a full-time vocational course because of the deteriorating position of young school-leavers who were looking for a job coupled with practical training.

Accordingly, the Tilburg experiment specialized in setting up full-time vocational courses (later called full-time short MBO) so that after leaving school students would be able to find work. During the course students passed through several practical periods, usually lasting six weeks each, during which they attended school on three days and went to work on two days. After six weeks the students were transferred to another employer so that a whole range of activities at work was presented to them during the training period (see Appendix 1). At work, the students put their formal knowledge and skills into practice to find out what was expected of them when they had finished their training.

Employers who are prepared to take on students for a certain period to allow them to gain experience in their organization demand that the production process should not be disrupted. Industry has its own dynamics and it is not the function of the school to interfere with this. Consequently, the school must thoroughly examine the different kinds of activity of the company or organization where the student is placed and prepare him or her accordingly.

An instrument was developed for this purpose. It allowed the out-of-school coordinator to examine the out-of-school environment in terms of the opportunities it provided.

With the help of this instrument the following information could be established:

- an overview of what the student can learn;
- the order in which the activities are learnt;
- who can assist the students during their stay with the company;
- when the learning can best take place;
- how long it will take the student to acquire a good command of the work;
- the skills that the school must first teach students so that they can benefit from the particular out-of-school experience.

The instrument used for analyzing the learning situation for fitters, plumbers and central heating engineers is presented in Appendix 2.

5. SUMMARY AND CONCLUSIONS

"Learning by participation" can make a vital contribution to a better correlation of learning at school with practical life situations. This approach adheres to the educational principles which have to be observed for the age group 16 to 19. These principles can be summarized as follows:

- all aspects of student development must be addressed;
- theory should not be taught in an isolated way: the students have to learn how to apply it and use it to achieve changes in practical situations;
- the subject matter taught must have an immediate connection with the practical experiences of the students;
- the students' own activity is given priority and the teacher assists them in coping with their own problems.

To achieve these major changes the government has started the educational experiments which have been analyzed above. Furthermore, through a well-organized promotional strategy, the readiness of non-experimenting schools to make changes has been encouraged and wide publicity has been given to the first valuable and concrete results coming from the experimental projects.

Gradually the value of "learning by participation" has become recognized and many aspects of the concept, such as tailoring the learning to the background of the student, relating teaching to real life, linking theory and practice, emphasizing individualization and organizing the teaching into small-scale syllabus/practical units, are increasingly encountered in the whole education system. In this reform process the fundamental premise has been that one should learn from life and that life produces the material for learning.

Appendix 1

Information on the Learning Activities of the Students

	first extramural learning period	second extramural learning period	third extramural learning period	fourth extramural learning period
1. Extramural learning locations in order of preference (the choice allocated to be underlined)				
2. Motive for this choice (in the same sequence as 1.; choice allocated underlined)				
3. Number of days attendance at the extramural learning location	_____ days	_____ days	_____ days	_____ days
4. Reason for not completing traineeship				

Information on the Learning Activities of the Students (cont.)

	first extramural learning period	second extramural learning period	third extramural learning period	fourth extramural learning period
5. Intramural programme activities linked to the extramural situation & specific to this pupil (state part of prog.)				
6. The educational value of the experience that the pupil has gained during these periods				
7. Assessment/evaluation by the group superviser of the pupil's learning in the extramural situation				
8. Impression made by the pupil on the person running the practical				

Information on the Learning Activities of the Students (cont.)

9. Other intramural activities specific to the pupil and not linked to an extramural learning situation (this includes optional subjects)	Study-oriented and the results thereof: Society-oriented: Hobby-oriented:
10. Personal counselling B = initial talk T = interim talk EV= evaluate talk E = final talk H = home visit A = concluding talk	Unscheduled talks (date and type of talk) Unplanned talks (date and brief summary)
11. Dates of completion of form	

Appendix 2 Analysis of Learning Situation

Sector: plumbing and fitting
specialisation:
job:
date:

A. General data

Name of the company:
address :
postcode and town :
telephone number :
liaison officer :
practical supervisor:
total number of employees:
number of employees at branch:

B. Organisation

Has the company separate departments for:

a. management yes/no
b. administration yes/no
c. buying yes/no
d. sales yes/no
e. design yes/no
f. estimating costs yes/no
g. drawing office yes/no
h. stores yes/no
i. workshop yes/no
j. maintenance yes/no
k. external services yes/no

C. Activities

1. Does the company mainly concentrate on:

a. new building ☐
b. work with clients ☐
c. both ☐

2. Can the school assume that during a traineeship of about 13 weeks a student will be involved in work on:

		Which is most frequent?
a. individual dwellings	yes/no	....
b. mass housing construction	yes/no	....
c. high rise buildings	yes/no	....

		Which is most frequent?
d. utilities-schools	yes/no	....
hospitals	yes/no	....
homes	yes/no	....
others	yes/no	....
e. industrial installations	yes/no	....
f. service and maintenance	yes/no	....

3. a. are the entire installations manufactured in situ? (traditional) yes/no
   b. are the installations only assembled in in situ? yes/no
   c. is a combination of the above two adopted? yes/no

4. Water installations
   Can we as a school assume that during a traineeship of 13 weeks or so a student will come into contact with:
   a. synthetics yes/no
   b. copper yes/no
   c. drinking water installations yes/no
   d. fire-prevention installations yes/no
   e. pressure boosting installations yes/no
   f. special installations for animals or plants yes/no
   g. industrial installations yes/no
   h. connecting-up of apparatus yes/no

5. Gas installations
   Can the school assume that during a traineeship of 13 weeks a student will come into contact with:
   a. threaded pipe yes/no
   b. copper yes/no
   c. synthetics yes/no
   d. thin-plated steel yes/no
   e. connecting-up of apparatus yes/no
   f. work on industrial installations yes/no

6. Sewerage/drainage works
   Can the school assume that during a traineeship of about 13 weeks a student will come into contact with:

(i) materials		which is most frequent?
a. P.V.C.	yes/no	☐
b. polyethane	yes/no	☐
c. cast iron	yes/no	☐
d. plasticized steel	yes/no	☐

(ii) connecting up apparatus
a. sanitary disposal equipment ☐
b. septic tanks ☐
c. separators (oil, fat, petrol, starch) ☐
d. sludge drain/pump with differences in level ☐

7. Roofing
Can the school assume that during a traineeship of about 13 weeks a student will come into contact with:
a. bituminous products ☐
b. zinc ☐
c. lead ☐
d. copper ☐
e. aluminium ☐
f. synthetic materials ☐
g. special mat. such as slate and roofing tiles ☐

8. Central heating installations
Can the school assume that during a traineeship of about 13 weeks a student will come into contact with:

(i) materials
a. fire tube ☐
b. threaded pipes ☐
c. thin plated steel ☐

(ii) fuels
a. oil ☐
b. gas ☐
c. alternative sources (solar, wind, etc.) ☐

(iii) media
a. warm water
b. hot water
c. steam
d. air-heating
e. air-conditioning

(iv) special central heating installations
(for example thermal oil in industrial installations) .....

9. The student
   a. can the student himself ask for certain kinds of work? yes/no
   b. is special industrial clothing required? yes/no
   c. if so, is this provided by the company? yes/no
   d. is there someone in the company who is specially responsible for giving guidance to the students (practical supervisor)? yes/no
   e. what activities can the pupil perform easily without a great deal of knowledge and experience? (notably in the first trainee period)

   ____
   ____
   ____
   ____

   f. what activities cannot be carried out without considerable knowledge and experience?

   ____
   ____
   ____
   ____

D. Social aspects

1. The level of the apprentice mechanic in the organizational structure: (by department and hierarchy)

   ____
   ____
   ____
   ____

2. The contacts to be maintained:
   a. outside the department:
   b. outside the company:
   c. does the stud. come into contact with management? yes/no

3. How are the shifts arranged?

   ____
   ____
   ____

4. Are there any working conditions that could present difficulties?

   ____
   ____
   ____

5. How are staff recruited and what criteria are used?

6. The level of trade union organization in the company:

7. Is information on the collective labour agreement provided by the company? yes/no

E. Miscellaneous

1. Is it possible to organize occasional group visits? yes/no
2. Is there someone able and willing to come and talk on an ad hoc basis as a guest lecturer on:
   (i) the occupation
   (ii) the extramural learning situation
3. Is it possible to arrange for shorter block traineeships? yes/no

By making this analysis of the learning situation the school has a precise idea of the opportunities in the company and can adjust its learning programme accordingly.
Students who are sent to a particular company are given a specified and detailed assignment which forms part of the training programme.
Two points are given priority in this assignment:

(I) The application of theoretical insights and skills in the actual practical situation at work;
(II) selective gathering of information on for example the working conditions and organization of the company; the entire training programme is structured along these lines.

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